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Data Record ...

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Expl. Fish.
(Hokkaido Univ.)
No. 3 1959
海洋漁業要報(北大水産)
第3号 昭和34年

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DATA RECORD OF OCEANOGRAPHIC OBSERVATIONS AND EXPLORATORY FISHING

No. 3

海洋調査漁業試験要報

第3号

THE FACULTY OF FISHERIES, HOKKAIDO UNIVERSITY
Hakodate, Hokkaido, Japan
November 1959

北海道大学水産学部
函館市港町
昭和34年11月

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DATA RECORD
OF
OCEANOGRAPHIC OBSERVATIONS AND
EXPLORATORY FISHING

No. 3

海洋調査漁業試験要報

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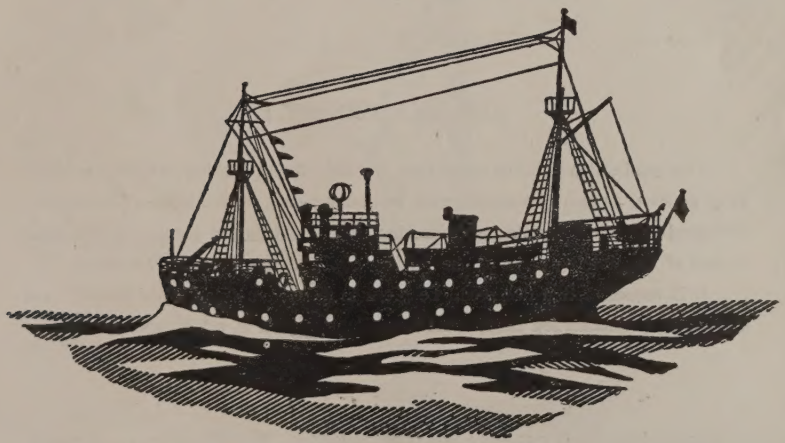

THE FACULTY OF FISHERIES, HOKKAIDO UNIVERSITY
Hakodate, Hokkaido, Japan
November 1959

北海道大学水産学部
函館市港町
昭和34年11月

Cruise Table of the Training Ships in 1957—1958

"Oshoro Maru"

Cruise number	Period	Waters
39-A	6 June 1957- 21 July 1957	Aleutian Water
39-B	23 Aug. 1957- 13 Sept. 1957	North Pacific
40	20 Nov. 1957- 20 Jan. 1958	South Pacific
41	3 Apr. 1958- 24 Apr. 1958	Round Japan
42	26 May 1958- 9 July 1958	Bering Sea
43	16 Aug. 1958- 28 Nov. 1958	South Pacific

"Hokusei Maru"

Cruise number	Period	Waters
1	17 Apr. 1957- 12 May 1957	Round Japan
2	12 June 1957- 29 Aug. 1957	North Pacific
3	20 Nov. 1957- 12 Feb. 1958	South Pacific
4	12 May 1958- 26 Aug. 1958	North Pacific
5	5 Nov. 1958- 31 Jan. 1959	Round Japan

EXPLANATORY NOTE

This publication is being undertaken for the sake of making available to interested persons, as soon as possible, some preliminary data derived from oceanographic, biological or exploratory-fishing researches carried out on the regular or occasional cruises of the training ships of the Faculty of Fisheries, Hokkaido University.

It is requested that due credit be given in data from this "Data Record" are quoted, or if information taken herefrom is incorporated in other papers.

本学部練習船を用いて行われた海洋観測，生物調査，漁業試験の結果が，各研究担当者によつて研究論文として纏められ，印刷公表されるまでにはなかりの時日を要し，且研究論文には個々の測定値が表示されない場合が多いことを考慮し，練習船の調査航海毎に調査成果を本要報として逐次刊行し，各方面の参考に供することにした。

本要報に載せた測定結果を他に引用する場合は本要報によつた旨明記しおかれたい。

Fig. 1 The "Oshoro Maru" anchored in the lagoon of Swarrow Island South Pacific. Observations of the solar eclipse were carried out on land.

Fig. 2 Operation of salmon gill-net from the "Hokusei Maru" in the Okhotsk Sea

DATA RECORD
OF
OCEANOGRAPHIC OBSERVATIONS AND EXPLORATORY FISHING

No. 3 November 1959

海 洋 調 査 漁 業 試 験 要 報

第 3 号 昭和34年11月

The Faculty of Fisheries, Hokkaido University

北 海 道 大 学 水 産 学 部

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(IGY Programme)

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I

THE "OSHORO MARU" CRUISE 39-B TO THE NORTHERN NORTH PACIFIC IN AUGUST AND SEPTEMBER 1957

(IGY PROGRAMME)

おしよろ丸　第39-B次航海
北太平洋観測　昭和32年8～9月
（国際地球観測年共同調査）

1. Cruise Report
（航海報告）

Departure from Hakodate	Aug. 23	函館出港
First G.E.K. observation	Aug. 24	G.E.K. 観測開始
First hydrographic cast	Aug. 26	海洋観測開始
Last hydrographic cast	Sept. 10	海洋観測終了
Last G.E.K. observation	Sept. 12	G.E.K. 観測終了
Arrival at Hakodate	Sept. 13	函館入港
Covered 3333 miles in total 22 days at sea	（総航程3333浬，航海日数22日）	

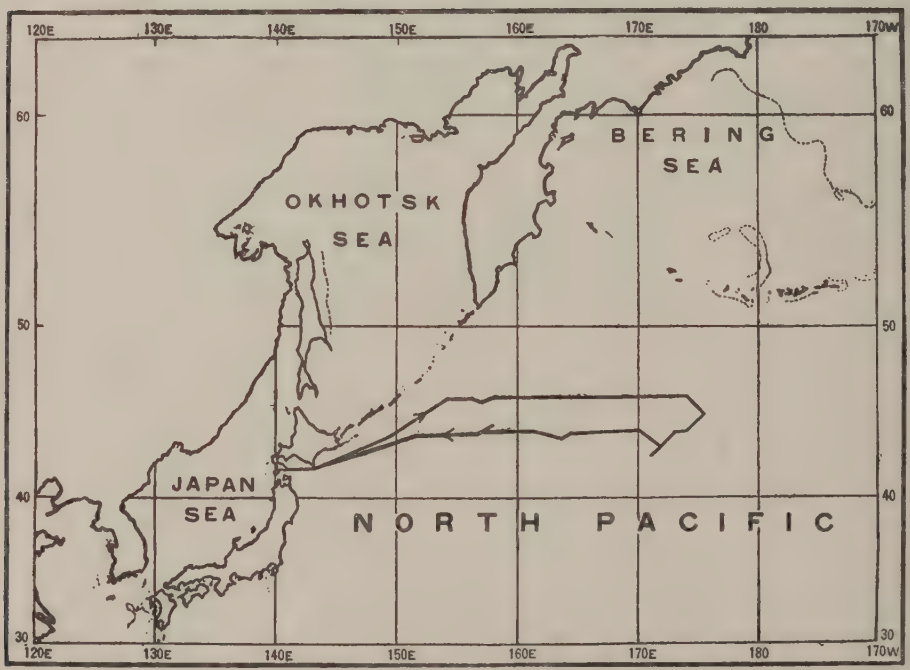

Fig. 3 Track of the cruise 39-B of the "Oshoro Maru" to the northern North Pacific in 1957

2. Members of Staff Aboard
（乗船者）

Captain	Takeji Fujii	船長	藤井武治
Crew			
Chief Officer	Shigeo Abe	一等航海士	阿部茂夫
First Officer	Shoji Saito	次席一等航海士	斎藤昭二

Second Officer	Noriyoshi Masuda	二等航海士	増田紀義
Third Officer	Shigekatsu Nakane	三等航海士	中根重勝
Chief Engineer	Shoichi Tomisawa	機関長	富沢正一
First Engineer	Kenzo Omi	一等機関士	尾見健三
Second Engineer	Ichiro Kataoka	二等機関士	片岡一郎
Third Engineer	Tetsusaburo Inomata	三等機関士	猪股鉄三郎
Chief Wireless Operator	Toshio Kasao	首席通信士	笠尾俊雄
Junior Wireless Operator	Mitsuo Kurotori	次席通信士	黒鳥満雄
Purser	Akira Togashi	事務長	富樫章
and 23 men		外 23 名	

Reserch men

Professor (Leader)	Seichi Yamaguchi	教授（団長）	山口生知
Professor	Naoichi Inoue	教授	井上直一
Lecturer	Satoshi Nishizawa	講師	西沢敏
Reserch Assistant	Yoshio Akiba	助手	秋葉芳雄
Graduate Student	Masahiro Kaziwara	大学院学生（北大理）	梶原昌弘
Graduate Student	Kinshiro Nakao	大学院学生（北大理）	中尾欣四郎
Graduate Student	Setsu Saito	大学院学生（北大理）	斎藤節
Total 43 persons		総員 43 名	

3. Research Commitee
（調査委員）

Professor (Coordinator)	Seichi Yamaguchi (Physical oceanography) （代表 教授 山口生知 海洋）
Professor	Noboru Suzuki (Chemistry) （教授 鈴木昇 化学）
Professor	Sigeru Motoda (Plankton) （教授 元田茂 プランクトン）
Professor	Naoichi Inoue (Physical oceanography) （教授 井上直一 海洋）
Assistant Professor	Teruyoshi Kawamura (Plankton) （助教授 川村輝良 プランクトン）
Assistant Professor	Hideto Koto (Physical oceanography) （助教授 小藤英登 海洋）
Assistant Professor	Kenji Kato (Chemistry) （助教授 加藤健司 化学）
Assistant Professor	Masami Ishida (G.E.K. measurement) （助教授 石田正己 G.E.K.による測定）
Assistant Professor (Captain)	Takeji Fujii (Meteorology) （助教授 船長 藤井武治 気象）

4. Specification of Hydrographic Stations
(海洋観測地点)

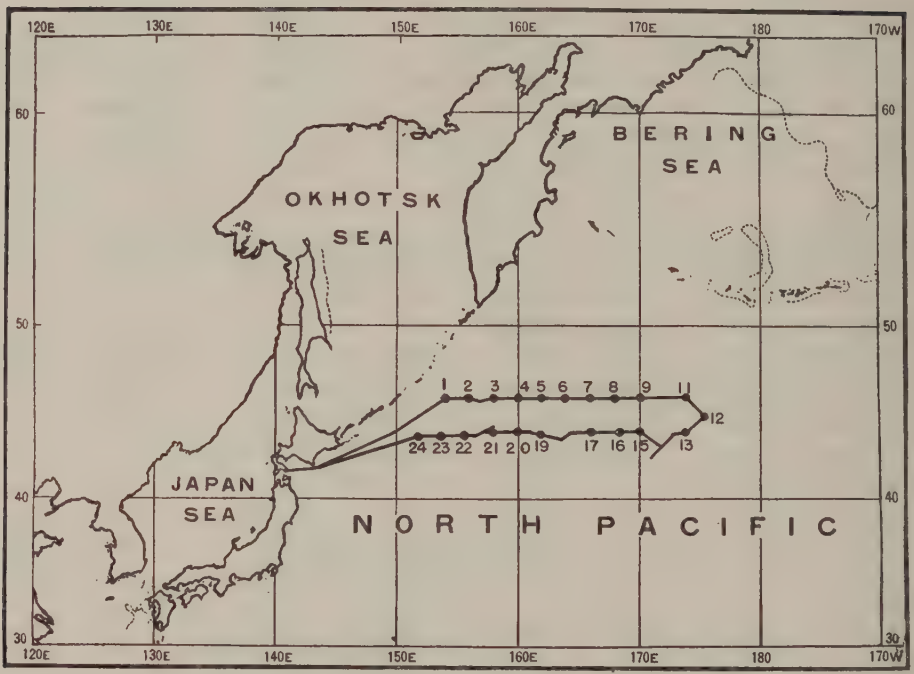

Fig. 4 Hydrographic stations in 1957 cruise 39-B of the "Oshoro Maru"

Table 1. Hydrographic stations in 1957 cruise 39-B to the northern North Pacific

No. of station	Ship's time		Greenwich meen time		Position		Maximum depth of cast (m)
	Date	Hour	Date	Hour	Latitude	Longitude	
Os 38(Os 1-IGY)	08—26	1130～1515	08—26	0130～0515	N46°01′	E164°00′	1474
Os 39(Os 2-IGY)	08—27	0215～0405	08—26	1615～1805	N46°01′	E156°00′	1478
Os 40(Os 3-IGY)	08—27	1815～1940	08—27	0815～0940	N46°00′	E158°00′	1388
Os 41(Os 4-IGY)	08—28	0615～0833	08—27	2015～2233	N46°00′	E160°00′	1369
Os 42(Os 5-IGY)	08—28	1805～2025	08—28	0805～1025	N46°10′	E161°58′	1344
Os 43(Os 6-IGY)	08—29	0550～0725	08—28	1950～2125	N46°00′	E164°00′	1456
Os 44(Os 7-IGY)	08—29	1653～1810	08—29	0653～0810	N46°00′	E166°00′	1228
Os 45(Os 8-IGY)	08—30	0415～0545	08—29	1715～1845	N46°00′	E168°00′	1452
Os 46(Os 9-IGY)	08—30	1455～1710	08—30	0355～0610	N46°00′	E170°00′	780
Os 47(Os10-IGY)							
Os 48(Os11-IGY)	08—31	1140～1310	08—31	0040～0210	N46°00′	E174°01′	1386
Os 49(Os12-IGY)	08—31	2105～2300	08—31	1005～1200	N45°00′	E175°32′	1295
Os 50(Os13-IGY)	09—01	0900～1025	08—31	2200～2325	N44°00′	E174°00′	1290
Os 51(Os14-IGY)							
Os 52(Os15-IGY)	09—03	1810～1920	09—03	0710～0820	N44°00′	E170°00′	1486
Os 53(Os16-IGY)	09—04	0840～1000	09—03	2140～2300	N44°00′	E168°32′	1490
Os 54(Os17-IGY)	09—05	0610～0745	09—04	1910～2045	N44°00′	E166°00′	730
Os 55(Os18-IGY)							
Os 56(Os19-IGY)	09—06	1120～1315	09—06	0120～0315	N43°49′	E162°00′	1133
Os 57(Os20-IGY)	09—07	0200～0330	09—06	1600～1730	N44°00′	E159°58′	1381
Os 58(Os21-IGY)	09—07	1335～1500	09—07	0335～0500	N44°00′	E158°00′	1287
Os 59(Os22-IGY)	09—09	1830～2026	09—09	0830～1026	N43°41′	E155°42′	1200
Os 60(Os23-IGY)	09—10	0545～0720	09—09	1945～2120	N43°41′	E154°00′	782
Os 61(Os24-IGY)	09—10	1630～1830	09—10	0630～0830	N43°41′	E152°05′	1485

5. Items of Observations and Procedure at Sea
（調査項目及び海上作業）

Meteorological observations（気象観測）

Every three-hour-interval, covering the whole course.

Measurement of surface temperatur（表面水温観測）

Every hour-interval, covering the whole course.

Hydrographic cast（海洋観測）

At 24 stations, covering depths from the surface to usually 1500 m. Cast to 0, 10, 20, 30, 50, 75, 100, 150, 200, 300, 400, 500, 600, 800, 1000, 1200 and 1500 m, in length of wire paid out.

In deep cast each Nansen bottle carried two protected thermometer and an unprotected thermometer.

At 43 points, surface current measurements by GEK.

Analyses of water samples（試水分析）

Chlorinity was estimated after returning from the voyage and dissolved oxygen, phosphate, silicate and hydrogen-ion concentration immediately aboard the ship.

Plankton sampling（プランクトン採集）

Vertical hauls with NORPAC standard net (45cm × 180cm) from approximately 150 m depth at each hydrographic station.

Horizontal tows with 130cm × 450cm stramin conical net at the surface for ten minutes at low speed at each hydrographic stations.

Fish larva net tow（稚魚ネット曳網）

With 130cm × 450cm stramin conical net (bolting silk, GG 54 at the posterior potion) by making horizontal tow at the surface for ten minutes at low speed, at every hydrographic station as well as at sunset daily while underway.

Measurement of light absorption coefficient of sea water *in situ*（現場海水の光吸収係数測定）

A turbidity-meter was suspended at various depths from the surface to about 150m depth.

Measurement of total radioactivity of sea water（海水全放射能測定）

At stations Os 38, 41, 43, 46, 61, a liter of sea water was dipped up each from the surface and just over and under the layer of thermocline, and brought to the laboratory. The samples were subjected to measurement by the Fe-Ba method. These data which were submitted as the IGY report, showed no radioactivity.

6. Publications issued up to the Present
（発表された報告，研究論文）

Inoue, N. and S. Nishizawa, 1959. Turbidity distribution in the subarctic water of the North Pacific in the summer 1957. Rec. Oceanogr. Wks. Japan, Spec. No. 3, pp 217

7. Data on Meteorological Observations
(気象観測記録)

Observations were made under sponsorship of ship's officers at every three-hour-interval at sea.

Y'Y' : Date and time in Greenwich Mean Time (Universal Time)

Movement of wind direction (dd) and speed (ff) were measured by means of aerovane type anemometer set on the top of pole on bridge at the height of 10.5 meters above the sea surface.

Measurements of air temperature (TT) and dew point temperature (T_dT_d) were made by means of Asmann aspiration dry and wet bulb thermometer set on the upper deck at the height of 5 meters above the sea surface.

$T_tT_tT_t$: Temperature of surface water (00.0C).

X : Uncertain.

Table 2. Data on meteorological observations in 1957 cruise 39-B to the northern North Pacific

Y'Y'		Y	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_rT_rT_r$
8	24	7	2	423	450	00	8	22	13	97	02	2	064	19	8	5	5	0	0	3	08	05	18	22	163
	24	7	2	424	454	03	8	22	10	97	02	2	061	18	8	6	5	0	0	8	03	07	18	22	149
	24	7	2	426	461	06	8	22	07	97	02	2	071	19	8	6	5	2	0	2	10	04	18	22	166
	24	7	2	427	467	09	7	22	16	97	61	2	073	19	5	6	4	1	9	2	02	03	19	22	172
	24	7	2	431	472	12	0	22	08	97	02	6	097	18	1	6	6	0	0	2	24	03	18	22	164
	24	7	2	433	478	15	0	22	06	93	44	2	096	16	0	0	9	0	0	5	01	02	16	22	149
	24	7	2	435	484	18	0	12	04	91	44	4	092	16	0	0	9	0	0	6	04	01	16	12	152
	24	7	2	438	489	21	9	16	01	91	63	4	113	16	9	×	0	×	×	1	21	02	15	16	152
8	25	1	2	439	495	00	8	03	01	97	63	6	123	16	8	6	5	0	0	2	10	51	16	03	166
	25	1	2	440	490	03	7	05	03	97	02	6	114	14	7	6	5	0	0	8	09	01	13	05	136
	25	1	2	442	502	06	1	02	04	98	01	1	124	13	1	0	5	1	0	3	10	02	11	02	120
	25	1	2	445	507	09	1	05	07	98	03	0	139	13	1	8	5	2	5	0	15	01	13	05	130
	25	1	2	447	515	12	8	05	07	96	02	0	154	12	8	6	5	0	0	3	15	53	16	05	134
	25	1	2	450	520	15	9	04	07	94	12	2	159	11	9	×	0	×	×	2	05	53	11	04	126
	25	1	2	454	528	18	8	03	06	96	28	2	166	12	8	6	5	0	0	2	07	54	11	03	138
	25	1	2	456	533	21	8	03	08	98	02	2	177	11	8	6	5	0	0	2	11	57	12	03	140
8	26	2	2	459	538	00	8	05	06	97	21	2	183	11	8	6	5	0	0	2	05	51	11	05	117
	26	2	2	460	540	03	8	13	06	97	02	2	187	12	8	6	5	0	0	1	04	01	11	13	118
	26	2	2	460	542	06	8	14	01	97	02	2	187	12	8	6	5	0	0	4	00	51	11	14	118
	26	2	2	460	548	09	8	16	04	97	02	2	180	12	8	6	5	0	0	6	07	50	12	16	118
	26	2	2	460	553	12	8	16	04	95	02	2	177	12	8	6	5	0	0	6	03	52	10	16	126
	26	2	2	460	558	15	8	14	04	97	02	2	173	11	8	6	5	0	0	6	04	00	10	14	108
	26	2	2	460	560	18	8	18	03	97	02	2	159	12	8	6	5	0	0	6	14	00	11	18	114
8	27	3	2	460	565	21	2	13	03	98	01	1	146	12	1	8	5	5	5	7	13	02	12	13	114
	27	3	2	458	572	00	8	13	04	98	01	1	144	14	8	6	5	0	0	7	02	51	13	13	132
	27	3	2	459	570	03	7	18	07	96	03	2	134	15	2	2	4	2	0	7	10	02	13	18	136
	27	3	2	460	577	06	8	19	10	98	02	2	124	14	4	4	4	6	0	6	10	02	13	19	132
	27	3	2	460	580	09	8	20	10	97	02	2	121	14	7	8	4	2	0	5	03	01	13	20	131
	27	3	2	460	589	15	8	23	07	96	02	2	111	13	4	7	4	2	0	7	10	02	13	23	124
	27	3	2	460	595	18	8	21	07	96	21	2	110	15	2	7	4	2	0	5	01	04	14	21	130
	27	3	2	460	600	21	8	20	13	96	60	2	111	14	0	0	4	2	0	0	01	01	14	20	136

Table 2. (Continued)

Y′Y′		Y	Q	$L_1L_2L_3$	$L_4L_5L_6$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_BT_B	T_dT_d	d_Wd_W	$T_1T_1T_1$
8	28	4	2	460	603	00	8	22	13	96	50	2	107	15	8	0	6	2	0	5	04	00	14	22	149
	28	4	2	460	610	03	8	21	17	96	02	5	096	15	8	6	4	0	0	7	11	02	15	21	148
	28	4	2	460	616	06	8	22	16	96	02	2	093	14	8	7	4	0	0	7	03	01	14	22	135
	28	4	2	460	620	09	3	31	09	98	01	2	113	13	1	5	5	1	5	2	20	51	13	31	133
	28	4	2	461	623	12	7	34	09	96	02	1	120	12	7	6	5	0	0	2	07	54	11	34	136
	28	4	2	461	630	15	8	35	03	95	51	2	126	11	3	7	4	2	0	3	06	56	11	35	138
	28	4	2	460	636	18	8	11	02	96	50	5	119	11	3	7	4	2	0	8	07	55	11	11	132
	28	4	2	460	640	21	8	14	13	96	63	6	111	12	4	6	4	2	0	8	08	54	12	14	134
8	29	5	2	460	646	00	8	13	16	95	63	6	092	11	8	7	5	0	0	7	19	54	11	13	132
	29	5	2	460	652	03	8	13	19	95	58	5	073	12	8	7	5	0	0	7	19	50	12	13	124
	29	5	2	460	659	06	9	15	13	93	47	6	067	14	9	×	0	×	×	7	06	02	13	15	129
	29	5	2	460	662	09	9	23	15	93	45	4	068	14	9	×	0	×	×	0	01	03	14	23	128
	29	5	2	460	668	12	9	22	15	94	63	6	077	14	9	×	0	×	×	2	09	03	14	22	122
	29	5	2	460	675	15	9	23	13	93	47	4	074	13	9	×	0	×	×	7	03	03	13	23	116
	29	5	2	460	680	18	9	23	16	93	45	4	074	13	9	×	0	×	×	5	00	01	13	23	126
	29	5	2	460	685	21	9	24	15	92	45	4	080	13	9	×	0	×	×	0	06	01	13	24	125
8	30	6	2	460	691	00	8	24	16	93	44	4	087	12	8	0	6	2	0	2	07	03	13	24	121
	30	6	2	460	698	03	9	23	14	93	46	4	079	14	9	×	0	×	×	7	08	04	14	23	116
	30	6	2	460	700	06	9	25	20	92	45	4	080	13	9	×	0	×	×	0	01	02	13	25	116
	30	6	2	460	706	09	8	25	14	94	42	4	074	12	8	6	4	×	×	6	06	02	12	25	114
	30	6	2	460	712	12	8	25	16	96	51	5	068	12	8	0	6	2	0	7	06	01	12	25	120
	30	6	2	460	720	15	9	25	10	95	60	6	064	12	9	×	×	×	×	8	04	01	12	25	122
	30	6	2	460	726	18	8	29	10	97	62	6	058	12	5	6	3	2	0	6	06	51	11	29	121
	30	6	2	460	734	21	8	34	07	95	62	6	048	12	3	5	4	2	×	6	10	01	12	34	116
8	31	7	2	460	740	00	8	04	10	95	63	6	007	11	8	0	6	2	0	7	41	01	11	04	104
	31	7	2	459	742	03	8	03	17	96	60	6	012	11	3	7	2	4	0	3	05	52	11	03	×
	31	7	2	456	753	06	7	02	18	97	01	6	044	11	6	8	5	7	0	2	32	52	11	00	115
	31	7	2	452	755	09	8	02	10	96	03	2	084	11	8	4	4	0	0	2	40	52	10	02	115
	31	7	2	450	755	12	8	36	08	96	02	2	090	10	8	6	5	0	0	2	06	54	09	36	124
	31	7	2	447	751	15	9	36	16	97	02	2	094	10	×	×	×	×	×	2	04	54	09	36	122
	31	7	2	444	746	18	8	02	10	97	02	2	101	11	8	8	4	0	0	3	07	52	10	02	128
	31	7	2	441	742	21	8	03	08	98	02	2	126	12	8	8	5	0	0	2	15	54	11	02	135

Table 2. (Continued)

Y′Y′	Y	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_tT_tT_t$
9	1	2	440	739	00	1	03	05	98	01	2	134	12	1	5	5	5	0	2	08	53	10	03	132
	1	2	441	733	03	7	05	06	97	02	2	140	12	2	1	5	1	8	2	06	53	10	05	133
	1	2	440	727	06	7	10	05	97	02	2	148	13	7	2	5	2	8	1	08	00	11	10	131
	1	2	436	724	09	8	10	05	97	03	2	161	13	6	5	5	2	0	2	13	01	10	10	125
	1	2	435	720	12	8	14	13	96	02	2	140	14	8	6	5	0	0	7	21	54	13	14	162
	1	2	431	717	15	8	14	19	96	02	2	118	16	8	×	×	×	×	7	22	52	16	14	168
	1	2	428	714	18	8	20	14	94	60	2	101	19	2	6	3	2	0	6	17	04	19	20	170
	1	2	427	714	21	8	25	20	94	02	5	118	19	6	7	1	2	0	2	17	02	17	25	179
9	2	2	428	716	00	8	26	20	97	02	2	124	19	7	7	5	2	0	2	06	02	19	26	183
	2	2	430	721	03	3	22	20	97	01	1	118	20	1	1	5	1	9	8	06	05	19	22	172
	2	2	431	722	06	8	22	20	96	03	2	118	19	8	7	2	0	0	4	00	04	19	22	174
	2	2	432	724	09	9	24	18	93	45	2	126	19	9	×	×	×	×	3	08	03	19	24	182
	2	2	432	724	12	9	23	19	95	51	5	110	19	9	×	0	×	×	7	16	03	19	23	173
	2	2	433	722	15	8	23	20	95	00	2	097	19	8	×	×	×	×	7	13	04	19	23	169
	2	2	437	718	18	8	25	24	95	63	2	088	19	4	4	2	2	0	6	09	03	19	25	177
	2	2	434	714	21	8	32	07	94	51	6	100	16	8	6	2	0	0	2	12	52	15	32	164
9	3	2	436	707	00	8	27	02	96	50	2	103	15	3	7	5	2	0	2	03	00	14	27	148
	3	2	432	707	03	8	25	07	97	02	2	094	14	2	6	5	2	0	7	09	01	14	25	138
	3	2	439	701	06	8	29	04	95	51	2	088	13	8	6	3	0	0	6	06	00	13	29	128
	3	2	440	700	09	8	29	04	95	51	5	097	13	8	6	3	0	0	2	09	00	13	29	128
	3	2	440	694	12	7	27	02	97	03	1	110	13	5	6	5	6	0	2	13	01	12	27	125
	3	2	440	688	15	9	22	03	92	47	2	113	13	9	×	0	×	×	3	03	01	12	22	122
	3	2	440	685	18	8	23	07	97	02	4	109	13	8	6	4	0	0	6	04	01	13	23	125
	3	2	440	685	21	8	23	04	96	51	2	117	13	8	6	3	0	0	1	08	00	12	23	125
9	4	2	440	685	00	8	23	02	96	51	5	111	13	8	0	6	2	0	5	06	01	13	23	126
	4	2	440	685	03	8	01	03	95	60	6	113	14	8	6	4	0	0	1	02	02	13	01	129
	4	2	440	685	06	7	04	02	95	03	6	127	14	5	9	5	6	0	3	14	03	13	02	124
	4	2	440	681	09	7	36	02	96	02	2	141	13	7	5	5	0	0	2	14	00	13	36	129
	4	2	440	673	12	8	34	03	96	02	2	141	13	8	6	5	0	0	4	00	51	12	34	129
	4	2	440	669	15	8	07	07	96	63	2	124	12	3	6	5	2	0	6	17	52	11	07	132
	4	2	440	662	18	8	08	16	95	63	2	099	12	4	6	3	2	0	7	25	53	11	08	131
	4	2	440	659	21	8	07	30	94	65	6	048	12	6	7	3	2	0	7	51	53	12	07	134

Table 2. (Continued)

Y′Y′	Y	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_rT_rT_r$
9 5	5	2	440	653	00	8	07	27	96	02	6	997	13	5	7	5	2	0	7	51	52	12	07	134
5	5	2	440	646	03	8	03	38	95	60	6	948	13	3	7	4	2	0	7	49	52	12	03	135
5	5	2	439	640	06	8	35	27	95	62	5	979	13	3	7	4	2	0	2	31	51	12	03	136
5	5	2	435	637	09	8	34	24	95	01	6	034	13	8	8	4	2	0	2	55	51	12	35	133
5	5	2	435	636	12	8	33	24	97	02	1	064	12	8	7	5	0	0	2	30	52	11	33	130
5	5	2	436	632	15	6	32	25	97	03	1	084	13	6	7	4	0	0	2	20	51	11	32	132
5	5	2	437	628	18	3	31	21	97	01	1	104	14	3	1	4	0	0	2	20	52	12	31	130
5	5	2	437	625	21	4	31	20	97	02	2	144	13	3	2	5	5	0	2	40	55	13	31	148
9 6	6	2	438	622	00	6	32	22	97	03	0	164	12	6	8	6	0	0	2	20	57	11	32	158
6	6	2	438	620	03	5	32	20	98	02	1	172	15	6	2	4	0	0	1	08	54	10	32	161
6	6	2	439	616	06	3	29	19	98	02	0	183	15	2	8	4	6	0	2	11	52	10	29	164
6	6	2	439	611	09	5	29	16	98	03	0	200	14	2	2	4	1	8	2	17	52	14	29	155
6	6	2	440	607	12	3	31	16	97	02	0	217	14	4	0	6	4	0	2	17	51	11	31	150
6	6	2	440	602	15	6	29	07	97	03	1	224	15	2	4	5	5	0	2	07	51	11	29	147
6	6	2	440	599	18	7	27	05	97	03	2	230	15	6	4	5	7	0	1	06	50	11	27	150
6	6	2	440	593	21	8	18	07	98	03	2	234	16	2	6	5	7	0	1	04	50	13	18	148
9 7	7	2	440	586	00	8	22	05	97	02	2	231	17	8	0	6	1	0	7	03	02	15	22	163
7	7	2	440	581	03	8	15	07	97	02	2	211	17	2	7	5	2	0	7	20	53	14	15	162
7	7	2	440	578	06	8	15	15	96	62	6	181	15	6	7	4	2	0	7	30	55	14	15	182
7	7	2	440	574	09	8	16	28	93	62	6	117	17	8	7	3	0	0	7	64	00	16	16	172
7	7	2	441	574	12	7	16	25	95	62	6	092	20	6	7	5	2	0	7	25	02	19	16	165
7	7	2	442	576	15	8	22	15	97	02	2	091	18	6	7	4	2	0	6	01	01	17	22	185
7	7	2	443	577	18	8	21	13	97	02	2	097	17	6	7	4	2	0	2	06	02	16	21	156
7	7	2	444	577	21	7	25	13	97	01	2	100	16	4	5	5	6	4	3	03	01	16	25	160
9 8	1	2	445	579	00	7	26	20	96	21	2	107	16	7	5	5	0	0	2	07	50	15	25	163
8	1	2	442	580	03	7	28	19	97	03	2	110	17	6	6	5	2	0	0	03	00	16	28	174
8	1	2	438	577	06	9	21	10	93	47	4	100	17	9	×	0	×	×	8	10	01	17	21	168
8	1	2	436	573	09	9	23	22	92	47	4	092	20	9	×	0	×	×	7	08	03	20	23	186
8	1	2	437	567	12	8	21	30	94	02	4	052	20	8	7	6	0	0	7	40	03	20	21	191
8	1	2	439	560	15	5	25	38	97	01	2	026	18	2	7	3	5	1	7	26	00	17	24	178
8	1	2	438	559	18	4	26	27	97	02	1	031	17	2	7	3	1	9	2	05	52	16	26	176
8	1	2			21	5	23	28	95	01	1	066	15	3	6	3	0	4	2	35	54	15	26	171

Table 2. (Continued)

Y'Y'		Y	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_tT_tT_t$
9	9	2	2	438	558	00	7	27	35	96	02	2	092	14	7	7	5	0	0	2	26	55	13	27	162
	9	2	2	437	565	03	6	29	32	96	01	1	115	14	6	4	4	0	0	2	23	55	12	29	134
	9	2	2	437	563	06	7	32	23	97	03	1	140	13	7	4	4	0	9	2	25	55	13	32	158
	9	2	2	437	557	09	7	31	16	97	02	2	172	13	7	8	4	0	0	2	32	56	10	31	164
	9	2	2	437	554	12	2	31	06	97	02	2	177	11	2	4	6	5	0	1	05	59	11	31	160
	9	2	2	437	549	15	4	33	05	97	01	1	195	12	2	5	6	0	9	2	18	57	11	33	154
	9	2	2	437	548	18	7	33	04	97	03	1	206	12	5	5	5	5	0	2	11	58	11	33	157
	9	2	2	437	540	21	6	09	07	98	01	2	212	13	1	6	4	5	0	2	06	55	11	09	154
9	10	3	2	437	534	00	8	11	08	97	01	2	213	14	8	5	5	0	0	2	01	51	13	11	142
	10	3	2	437	528	03	8	13	09	97	03	2	200	14	3	4	4	2	0	7	13	03	13	13	121
	10	3	2	437	521	06	8	14	17	96	60	6	157	13	2	4	4	2	0	7	43	03	13	14	115
	10	3	2	437	521	09	8	11	07	95	02	6	181	13	6	6	3	2	0	1	24	01	12	11	124
	10	3	2	435	514	12	8	14	03	96	02	2	174	14	8	6	5	0	0	7	07	01	14	14	137
	10	3	2	435	511	15	8	01	02	94	28	2	177	14	8	5	5	0	0	2	03	01	14	01	134
	10	3	2	433	502	18	8	23	03	97	02	2	172	14	6	5	5	1	0	6	05	51	13	23	144
9	11	4	2	430	490	00	4	09	02	97	03	2	212	16	4	5	5	5	0	2	21	51	14	07	152
	11	4	2	430	484	03	2	00	00	98	01	1	216	16	2	4	6	6	4	2	19	00	15	09	157
	11	4	2	429	478	06	4	00	00	98	02	0	214	17	2	4	6	1	1	2	04	52	15	00	174
	11	4	2	428	473	09	6	09	01	97	02	1	220	16	2	5	5	3	1	2	02	50	16	00	170
	11	4	2	426	466	12	2	09	01	97	02	2	219	14	2	6	5	1	0	4	06	01	16	09	157
	11	4	2	425	460	15	5	11	05	97	03	1	210	16	1	4	5	3	6	7	01	01	14	09	135
	11	4	2	424	456	18	2	11	08	97	01	1	197	16	1	1	4	1	0	6	09	50	16	11	160
	11	4	2	422	446	21	8	10	11	97	03	1	186	16	8	5	5	0	0	7	13	53	16	11	176
																					11	50	16	10	166

8. Data on Temperature and Salinity, and Computed Data on Dynamic Depth
(温度塩分記録及びダイナミックデプス計算)

Donble titration for chlorinity determination, calculation of depth, interpolation of data and computation of dynamic depth were made by Y. Akiba.

Code of the world Meteorological Organization

dd: Wind direction

ff: Wind speed

ww: Present weather

TTT: Air temperature

Abbreviatons

Tr: Transparency of water in meters as represented by Secchi's disc reading

C: Color of sea

X: No observation

TabIe 3. Data on temperature, salinity and dynamic depth in 1957 cruise 39-B to the northern North Pacific

Station Os 38 (Os 1-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0130-0515	26	8	1957	46°01′N	164°00′E	13	06	02	124	S E2	W NW1	5	15

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		11.5	18.09	32.68	0	11.5	18.09	32.68	24.90	307	0
10	0	11.39	18.11	32.72	10	11.39	18.11	32.72	24.93	304	0.031
20	〃	11.19	18.12	32.74	20	11.19	18.12	32.74	25.00	297	0.061
30	〃	7.35	18.18	32.84	30	7.35	18.18	32.84	25.71	230	0.087
50	〃	6.21	18.22	32.92	50	6.21	18.22	32.92	25.91	211	0.132
73	14	1.40	18.37	33.19	75	1.39	18.37	33.19	26.59	146	0.176
97	〃	1.27	18.39	33.22	100	1.28	18.39	33.22	26.63	143	0.213
146	〃	1.45	18.43	33.30	150	1.46	18.44	33.31	26.69	136	0.283
194	〃	1.52	18.50	33.42	200	1.53	18.50	33.42	26.76	130	0.350
280	12	1.64	18.50	33.42	300	1.67	18.51	33.44	26.77	129	0.480
376	〃	1.78	18.54	33.49	400	1.88	18.56	33.53	26.82	124	0.608
472	〃	2.19	18.63	33.66	500	2.32	18.65	33.69	26.92	115	0.729
576	〃	2.66	18.69	33.77	600	2.72	18.72	33.82	26.99	108	0.844
776	〃	3.00	18.82	34.00	800	2.99	18.83	34.02	27.12	96	1.058
975	〃	2.89	18.90	34.14	1000	2.86	18.91	34.16	27.25	83	1.248
1175	〃	2.66	18.95	34.23	1200	2.64	18.95	34.23	27.32	73	1.418
1474	〃	2.33	18.97	34.27	1500						

Table 3. (Continued)

Station Os 39 (Os 2-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1615-1805	26	8	1957	46°01′N	156°00E′	18	03	02	116	S1	SSW1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		11.2	18.04	32.59	0	11.2	18.04	32.59	24.89	308	0
10	0	10.31	18.02	32.56	10	10.31	18.02	32.56	25.00	297	0.030
20	〃	6.83	18.06	32.63	20	6.83	18.06	32.63	25.60	240	0.057
30	〃	4.19	18.11	32.73	30	4.19	18.11	32.73	25.97	205	0.080
50	〃	2.62	18.24	32.95	50	2.62	18.24	32.95	26.30	199	0.120
75	〃	1.20	18.28	33.03	75	1.30	18.28	33.03	26.47	157	0.164
100	〃	0.69	18.32	33.10	100	0.69	18.32	33.10	26.55	150	0.203
150	〃	0.71	18.39	33.22	150	0.71	18.39	33.22	26.66	139	0.275
200	〃	1.82	18.53	33.48	200	1.82	18.53	33.48	26.79	127	0.343
295	〃	3.08	18.64	33.68	300	3.10	18.65	33.69	26.85	121	0.468
394	〃	3.44	18.82	34.00	400	3.43	18.82	34.00	27.07	100	0.580
492	〃	3.23	18.89	34.13	500	3.22	18.89	34.13	27.19	89	0.677
588	〃	3.10	18.89	34.13	600	3.07	18.90	34.14	27.22	86	0.768
786	〃	2.85	18.99	34.31	800	2.83	18.99	34.31	27.37	72	0.736
984	〃	2.56	19.01	34.34	1000	2.55	19.01	34.34	27.42	67	1.086
1181	〃	2.38	19.05	34.42	1200	2.36	19.05	34.42	27.50	60	1.226
1478	〃	2.13	19.10	34.51	1500						

Station Os 40 (Os 3-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0815-0940	27	8	1957	46°00′N	158°00′E	20	10	02	138	SSW3	SW1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		13.2	18.02	32.56	0	13.2	18.02	32.56	24.48	347	0
10	7	12.95	18.05	32.61	10	12.95	18.05	32.61	24.58	337	0.034
20	〃	12.76	18.05	32.61	20	12.76	18.05	32.61	24.62	333	0.068
30	〃	12.57	18.05	32.61	30	12.57	18.05	32.61	24.65	330	0.101
50	〃	3.97	18.25	32.97	50	3.97	18.25	32.97	26.20	183	0.523
74	10	1.83	18.25	32.97	75	1.82	18.25	32.97	26.39	165	0.196
98	〃	1.57	18.29	33.04	100	1.59	18.30	33.06	26.47	157	0.237
148	〃	2.07	18.45	33.33	150	2.11	18.46	33.35	26.66	139	0.331
197	〃	3.12	18.67	33.73	200	3.13	18.68	33.75	26.90	117	0.396
264	22	3.39	18.79	33.95	300	3.40	18.81	33.98	27.05	102	0.508
352	〃	3.43	18.84	34.04	400	3.39	18.85	34.05	27.12	96	0.609
443	〃	3.35	18.86	34.07	500	3.28	18.87	34.09	27.17	91	0.705
534	〃	3.22	18.88	34.11	600	3.13	18.90	34.14	27.21	87	0.798
717	〃	2.96	18.93	34.20	800	2.80	18.96	34.25	27.32	77	0.972
905	〃	2.59	18.99	34.31	1000	2.49	19.01	34.34	27.42	67	1.128
1097	〃	2.39	19.02	34.36	1200	2.27	19.03	34.38	27.46	63	1.270
1388	〃	2.17	19.04	34.40	1500						

Table 3. (Continued)

Station Os 41 (Os 4-IGY) 1957

Time (G.M.T)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0815-0940	27	8	1957	46°00′N	158°00′E	20	10	02	138	SSW3	WS1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5 \triangle st$	$\triangle D$
0		13.6	18.05	32.61	0	13.6	18.05	32.61	24.45	349	0
10	0	13.07	18.07	32.65	10	13.07	18.07	32.65	24.58	337	0.034
20	〃	13.04	18.08	32.66	20	13.04	18.08	32.66	24.60	335	0.068
30	〃	7.09	18.20	32.88	30	7.09	18.20	32.88	25.76	225	0.096
50	〃	3.22	18.25	32.97	50	3.22	18.25	32.97	26.27	176	0.136
74	10	2.13	18.25	32.97	75	2.11	18.25	32.97	26.37	167	0.179
98	〃	1.61	18.28	33.03	100	1.63	18.29	33.04	26.46	157	0.220
148	〃	2.22	18.50	33.42	150	2.25	18.51	33.44	26.72	134	0.293
197	〃	2.89	18.69	33.77	200	2.90	18.69	33.77	26.93	114	0.356
253	29	3.13	18.73	33.84	300	3.31	18.78	33.93	27.04	103	0.467
340	〃	3.47	18.84	34.04	400	3.31	18.87	34.08	27.15	93	0.567
426	〃	3.23	18.88	34.11	500	3.27	18.91	34.16	27.21	87	0.660
516	〃	3.28	18.92	34.18	600	3.12	18.94	34.22	27.28	80	0.747
700	〃	2.93	18.97	34.27	800	2.76	18.99	34.31	27.38	71	0.907
888	〃	2.61	18.01	34.34	1000	2.50	19.02	34.36	27.42	67	1.057
1078	〃	2.42	19.03	34.38	1200	2.32	19.05	34.42	27.50	60	1.197
1369	〃	2.18	19.09	34.49	1500						

Station Os 42 (Os 5-IGY) 1957

Time (G.M.T.)	Day	Month	Yera	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0805-1025	28	8	1957	46°10′N	161°58′E	31	09	01	130	Nw3	Sw1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5 \triangle st$	$\triangle D$
0		13.1	18.38	33.21	0	13.1	18.38	33.21	25.00	297	0
10	0	13.27	18.38	33.21	10	13.27	18.38	33.21	25.00	297	0.030
20	〃	13.20	18.42	33.28	20	13.20	18.42	33.28	25.03	294	0.060
30	〃	9.44	18.50	33.42	30	9.44	18.52	33.42	25.83	218	0.085
50	7	7.05	18.51	33.44	50	7.05	18.51	33.44	26.20	183	0.125
74	〃	5.72	18.60	33.60	75	5.72	18.60	33.60	26.50	154	0.168
99	〃	5.28	18.60	33.60	100	5.28	18.61	33.62	26.57	148	0.206
139	22	5.12	18.63	33.66	150	5.20	18.64	33.68	26.62	143	0.279
185	〃	5.52	18.67	33.73	200	5.48	18.68	33.75	26.65	140	0.351
240	39	5.38	18.70	33.78	300	4.42	18.70	33.78	26.80	126	0.487
324	〃	4.09	18.70	33.78	400	3.88	18.70	33.78	26.84	122	0.614
410	〃	3.86	18.70	33.78	500	3.63	18.71	33.80	26.89	117	0.737
494	〃	3.63	18.71	33.80	600	3.51	18.76	33.89	26.98	109	0.854
670	〃	3.42	18.79	33.95	800	3.18	18.90	34.14	27.10	98	1.070
855	〃	3.08	18.95	34.23	1000	2.85	18.98	34.29	27.35	74	1.254
1050	〃	2.77	19.00	34.33	1200	2.61	19.00	34.33	37.40	69	1.410
1344	〃	2.46	19.00	34.33	1500						

Table 3. (Continued)

Station Os 43 (Os 6-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1950–2125	28	8	1957	46°00′ N	164°00′ E	14	13	63	115	S E 3	S 1	4	12

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\Delta st$	ΔD
0		13.6	18.20	32.88	0	13.6	18.20	32.88	24.70	326	0
10	2	13.68	18.24	32.95	10	13.68	18.24	32.95	24.69	327	0.033
20	〃	13.79	18.27	33.01	20	13.79	18.27	33.01	24.70	326	0.065
30	〃	10.61	18.37	33.19	30	10.61	18.37	33.19	25.39	260	0.095
50	7	6.68	18.55	33.51	50	6.68	18.55	33.51	26.31	173	0.138
74	〃	4.84	18.55	33.51	75	4.84	18.55	33.51	26.53	152	0.179
99	〃	4.82	18.57	33.55	100	4.82	18.58	33.57	26.56	149	0.217
132	28	4.79	18.60	33.60	150	5.00	18.62	33.64	26.62	143	0.291
177	〃	5.22	18.66	33.71	200	5.14	18.67	33.73	26.68	137	0.362
290	13	3.85	18.70	33.78	300	3.83	18.71	33.80	26.87	119	0.492
386	〃	3.64	18.77	33.91	400	3.64	18.78	33.93	26.99	108	0.609
482	〃	3.62	18.82	34.00	500	3.62	18.83	34.02	27.06	101	0.717
578	〃	3.61	18.89	34.13	600	3.56	18.90	34.14	27.17	91	0.817
772	〃	3.19	18.95	34.23	800	3.14	18.96	34.25	27.30	79	0.997
968	〃	2.82	19.00	34.33	1000	2.79	19.00	34.33	27.39	70	1.157
1164	〃	2.63	19.02	34.36	1200	2.60	19.03	34.38	27.44	65	1.305
1456	〃	2.35	19.09	34.49	1500						

Station Os 44 (Os 7-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0653–0810	29	8	1957	46°00′ N	166°00′ E	15	13	47	138	SSE3	S 3	4	14

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\Delta st$	ΔD
0		12.7	18.32	33.10	0	12.7	18.32	33.10	25.00	297	0
10	10	12.58	18.36	33.17	10	12.58	18.36	33.17	25.07	290	0.029
20	〃	12.54	18.38	33.21	20	12.54	18.38	33.21	25.10	287	0.058
30	〃	12.59	18.43	33.30	30	12.59	18.43	33.30	25.18	280	0.087
46	22	5.85	18.44	33.31	50	5.81	18.45	33.33	26.28	175	0.133
70	〃	5.60	18.51	33.44	75	5.14	18.53	33.48	26.48	156	0.174
93	〃	3.29	18.63	33.66	100	3.29	18.64	33.68	26.81	125	0.210
123	35	3.30	18.67	33.73	150	3.36	18.69	33.77	26.89	117	0.271
164	〃	3.40	18.71	33.80	200	3.67	18.74	33.86	26.92	115	0.330
208	50	3.74	18.75	33.87	300	3.71	18.84	34.04	27.06	101	0.440
280	〃	3.74	18.81	33.98	400	3.68	18.94	34.22	27.20	88	0.537
354	〃	3.69	18.92	34.18	500	3.45	18.98	34.29	27.30	79	0.624
432	〃	3.68	18.95	34.23	600	3.12	19.03	34.38	27.40	69	0.702
594	〃	3.13	19.03	34.38	800	2.91	19.11	34.52	27.52	58	0.838
765	〃	2.97	19.10	34.51	1000	2.63	19.16	34.61	27.63	47	0.954
945	〃	2.68	19.16	34.61	1200	2.44	19.18	34.65	27.69	42	1.056
1228	〃	2.42	19.18	34.65	1500						

Table 3. (Continued)

Station Os 45 (Os 8-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1715-1845	29	8	1957	46°00′N	168°00′E	23	16	45	132	SW4	WSW2	4	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		11.6	18.29	33.04	0	11.6	18.29	33.04	25.15	283	0
10	14	11.46	18.26	32.99	10	11.46	18.26	32.99	25.15	283	0.028
19	〃	11.37	18.30	33.06	20	11.38	18.31	33.08	25.22	276	0.056
29	〃	11.38	18.31	33.08	30	11.15	18.32	33.10	25.29	269	0.084
49	10	6.76	18.55	33.51	50	6.71	18.55	33.51	26.30	173	0.128
74	〃	5.43	18.58	33.57	75	5.42	18.58	33.57	26.50	154	0.169
98	〃	5.24	18.62	33.64	100	5.24	18.62	33.64	26.60	145	0.207
143	17	5.24	18.70	33.79	150	5.17	18.70	33.79	26.71	135	0.278
191	〃	4.57	18.71	33.80	200	4.56	18.72	33.82	26.80	126	0.344
290	13	3.45	18.74	33.86	300	3.45	18.75	33.87	26.97	110	0.465
386	〃	3.43	18.85	34.05	400	3.43	18.86	34.07	27.12	96	0.570
484	〃	3.40	18.85	34.13	500	3.40	18.90	34.14	27.20	88	0.665
579	〃	3.42	18.98	34.29	600	3.38	18.99	34.31	27.31	78	0.752
772	〃	3.07	19.03	34.38	800	3.03	19.04	34.40	27.42	67	0.906
967	〃	2.76	19.08	34.47	1000	2.72	19.08	34.47	27.50	60	1.044
1161	〃	2.54	19.09	34.49	1200	2.51	19.09	34.49	27.54	56	1.174
1452	〃	2.28	19.10	34.50	1500						

Station Os 46 (Os 9-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0355-0610	30	8	1957	46°00′N	170°00′E	25	20	45	125	WSW5	SW2	4	19

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10\triangle st$	$\triangle D$
0		11.6	18.20	32.88	0	11.6	18.20	32.88	25.03	294	0
10	15	11.40	18.16	32.81	10	11.40	18.16	32.81	25.02	295	0.030
19	〃	11.35	18.17	32.83	20	11.35	18.17	32.83	25.03	294	0.059
29	〃	11.32	18.18	32.84	30	11.20	18.18	32.84	25.08	289	0.088
42	32	9.59	18.19	32.86	50	7.00	18.20	32.88	25.78	223	0.140
64	〃	4.41	18.21	32.90	75	3.76	18.25	32.97	26.21	182	0.191
85	〃	3.33	18.27	33.01	100	3.18	18.34	33.13	26.39	165	0.234
111	42	3.04	18.36	33.17	150	2.98	18.63	33.66	26.85	121	0.306
149	〃	2.98	18.63	33.66	200	2.91	18.70	33.78	26.94	113	0.366
160	〃	2.96	18.63	33.66	300	3.22	18.79	33.95	27.04	103	0.476
210	64	2.90	18.71	33.80	400	3.24	18.82	34.00	27.10	98	0.578
260	〃	3.13	18.76	33.89	500	3.20	18.85	34.05	27.10	98	0.679
310	〃	3.25	18.80	33.96	600	3.24	18.86	34.07	27.15	93	0.778
410	〃	3.24	18.82	34.00	800	2.58	18.99	34.31	27.39	70	0.950
515	〃	3.22	18.85	34.05	1000						
620	〃	3.25	18.87	34.09	1200						
780	〃	2.58	18.99	34.31	1500						

Table 3. (Continued)

Station Os 48 (Os 11-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0040-0210	31	8	1957	46°00′N	174°01′E	04	10	63	107	NE3	SW2	5	14

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		11.5	18.17	32.83	0	11.5	18.17	32.83	25.00	294	0
10	6	11.44	18.27	33.01	10	11.44	18.27	33.01	25.15	283	0.029
20	〃	11.17	18.28	33.03	20	11.17	18.28	33.03	25.22	276	0.057
30	〃	11.03	18.32	33.10	30	11.03	18.32	33.10	25.30	268	0.084
49	13	4.96	18.37	33.19	50	4.95	18.37	33.19	26.27	176	0.129
73	〃	4.74	18.47	33.37	75	4.76	18.47	33.37	26.43	161	0.171
97	〃	5.15	18.55	33.51	100	5.12	18.55	33.51	26.50	154	0.211
130	30	4.73	18.57	33.55	150	4.69	18.61	33.62	26.63	142	0.286
173	〃	4.63	18.65	33.69	200	4.38	18.66	33.71	26.73	133	0.356
270	〃	3.64	18.68	33.75	300	3.62	18.72	33.82	26.90	117	0.483
360	〃	3.59	18.79	33.95	400	3.56	18.81	33.98	27.03	104	0.596
450	〃	3.54	18.82	34.00	500	3.51	18.83	34.02	27.08	99	0.702
540	〃	3.49	18.83	34.02	600	3.45	18.86	34.07	27.12	96	0.804
720	〃	3.36	18.92	34.18	800	3.22	18.94	34.22	27.26	82	0.992
905	〃	3.03	18.97	34.27	1000	3.83	19.00	34.33	27.38	71	1.158
1096	〃	2.64	19.03	34.38	1200	2.53	19.03	34.38	27.45	64	1.308
1386	〃	2.34	19.03	34.38	1500						

Station Os 49 (Os 12-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1005-1200	31	8	1957	45°00′N	175°32′E	02	10	03	105	N3	WNW3	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		12.1	18.42	33.28	0	12.1	18.42	33.28	25.23	275	0
10	3	12.13	18.41	33.26	10	12.13	18.41	33.26	25.23	275	0.028
20	〃	12.09	18.37	33.19	20	12.09	18.37	33.19	25.19	279	0.055
30	〃	12.11	18.37	33.19	30	12.11	18.37	33.19	25.18	280	0.083
48	18	7.73	18.42	33.28	50	7.56	18.42	33.28	26.00	202	0.132
71	〃	5.64	18.50	33.42	75	5.64	18.51	33.44	26.39	165	0.178
95	〃	5.64	18.59	33.58	100	5.59	18.59	33.58	26.50	154	0.218
138	23	5.10	18.62	33.64	150	5.08	18.63	33.66	26.62	143	0.293
184	〃	4.98	18.65	33.69	200	4.79	18.66	33.71	26.70	135	0.363
276	29	3.82	18.69	33.77	300	3.79	18.70	33.78	26.86	120	0.493
367	〃	3.72	18.75	33.87	400	3.68	18.77	33.91	26.98	109	0.610
459	〃	3.62	18.82	34.00	500	3.53	18.83	34.02	27.08	99	0.717
492	40	3.53	18.83	34.02	600	3.48	18.89	34.13	27.16	92	0.816
657	〃	3.46	18.92	34.18	800	3.20	18.92	34.18	27.23	85	1.002
830	〃	3.14	18.92	34.18	1000	2.84	18.98	34.29	27.35	74	1.172
1010	〃	2.82	18.98	34.29	1200	2.51	19.03	34.38	27.45	64	1.324
1295	〃	2.36	19.06	34.43	1500						

Table 3. (Continued)

Station Os 50 (Os 13-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2200-2325	31	8	1957	44°00′N	174°00′E	03	05	01	117	NNE2	NNE1	4	15

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		13.9	18.54	33.49	0	13.9	18.54	33.49	25.04	292	0
10	5	13.90	18.50	33.42	10	13.90	18.50	33.42	25.00	297	0.030
20	〃	13.80	18.52	33.46	20	13.80	18.52	33.46	25.06	291	0.059
30	〃	12.94	18.55	33.51	30	12.94	18.55	33.51	25.27	271	0.088
49	13	7.96	18.63	33.66	50	7.89	18.63	33.66	26.24	179	0.133
74	〃	6.24	18.63	33.66	75	6.23	18.63	33.66	26.49	155	0.175
98	〃	5.98	18.65	33.69	100	5.78	18.65	33.69	26.54	151	0.213
130	31	6.05	18.68	33.75	150	6.14	18.68	33.75	26.57	148	0.289
173	〃	6.23	18.69	33.77	200	5.83	18.70	33.78	26.63	142	0.363
246	40	5.14	18.71	33.80	300	4.40	18.73	33.84	26.83	123	0.498
327	〃	4.17	18.74	33.86	400	4.10	18.78	33.93	26.94	113	0.619
409	〃	4.09	18.78	33.93	500	4.01	18.91	34.16	27.13	95	0.727
490	〃	4.03	18.91	34.16	600	3.91	18.92	34.18	27.30	79	0.819
660	〃	3.72	18.92	34.18	800	3.42	19.00	34.33	27.33	76	0.985
835	〃	3.34	19.02	34.36	1000	2.99	19.06	34.43	27.45	64	1.139
1013	〃	2.96	19.06	34.43	1200	2.59	19.10	34.51	27.54	56	1.273
1290	〃	2.41	19.12	34.54	1500						

Station Os 52 (Os 15-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0710-0820	3	9	1957	44°00′N	170°00′E	29	04	51	129	WNW2	WSW2	5	9

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		12.9	18.26	32.99	0	12.9	18.26	32.99	24.87	309	0
10	3	12.76	18.26	32.99	10	12.76	18.26	32.99	24.90	307	0.031
20	〃	12.56	18.35	33.15	20	12.56	18.35	33.15	25.06	291	0.061
30	〃	12.39	18.41	33.26	30	12.39	18.41	33.26	25.18	280	0.090
50	〃	6.53	18.41	33.26	50	6.53	18.41	33.26	26.13	190	0.137
75	〃	4.97	18.48	33.39	75	4.97	18.48	33.39	26.41	163	0.181
100	〃	4.68	18.51	33.44	100	4.68	18.51	33.44	26.50	154	0.221
150	〃	4.57	18.69	33.77	150	4.57	18.69	33.77	26.75	131	0.293
200	〃	4.08	18.74	33.86	200	4.08	18.74	33.86	26.89	117	0.356
296	0	3.30	18.81	33.98	300	3.30	18.81	33.98	27.09	98	0.460
395	〃	3.38	18.88	34.11	400	3.37	18.88	34.11	27.16	92	0.563
493	〃	3.28	18.93	34.20	500	3.28	18.93	34.20	27.24	84	0.654
592	〃	3.29	18.96	34.25	600	3.28	18.97	34.27	27.30	79	0.739
790	〃	3.06	19.03	34.38	800	3.04	19.03	34.38	27.40	69	0.897
988	〃	2.74	19.05	34.42	1000	2.72	19.05	34.42	27.47	62	1.039
1187	〃	2.49	19.11	34.52	1200	2.48	19.11	34.52	27.57	53	1.167
1486	〃	2.13	19.15	34.60	1500						

Table 3. (Continued)

Station Os 53 (Os 16-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2140-2300	3	9	1957	44°00′N	168°32′E	23	04	51	127	SW1	SW1	5	11

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		12.6	18.31	33.08	0	12.6	18.31	33.08	25.00	297	0
10	10	12.19	18.35	33.15	10	12.19	18.35	33.15	25.12	286	0.029
20	〃	12.00	18.36	33.17	20	12.00	18.36	33.17	25.19	279	0.058
30	〃	7.92	18.51	33.44	30	7.92	18.51	33.44	26.08	194	0.081
50	0	4.97	18.53	33.48	50	4.97	18.53	33.48	26.50	154	0.116
75	〃	4.96	18.55	33.51	75	4.96	18.55	33.51	26.52	153	0.155
100	〃	4.86	18.58	33.57	100	4.86	18.58	33.57	26.58	147	0.193
150	〃	4.91	18.67	33.73	150	4.91	18.67	33.73	26.70	135	0.264
200	〃	4.25	18.68	33.75	200	4.25	18.68	33.75	26.78	128	0.331
299	〃	3.62	18.73	33.84	300	3.62	18.73	33.84	26.91	116	0.455
398	〃	3.47	18.83	34.02	400	3.47	18.83	34.02	27.08	99	0.566
497	〃	3.25	18.88	34.11	500	3.25	18.88	34.11	27.18	90	0.664
596	〃	3.21	18.92	34.18	600	3.20	18.92	34.18	27.25	83	0.754
795	〃	2.98	18.94	34.22	800	2.97	18.96	34.25	27.31	78	0.924
993	〃	2.73	19.05	34.42	1000	2.72	19.05	34.42	27.46	63	1.076
1192	〃	2.51	19.08	34.47	1200	2.49	19.08	34.47	27.52	58	1.210
1490	〃	2.22	19.19	34.67	1500						

Station Os 54 (Os 17-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1910-2045	4	9	1957	44°00′N	166°00′E	07	30	65	120	ENE6	ENE2	4	7

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		13.5	18.26	32.99	0	13.5	18.26	32.99	24.75	321	0
9	22	13.49	18.28	33.03	10	13.48	18.28	33.04	24.80	316	0.032
19	〃	13.43	18.28	33.03	20	13.37	18.29	33.04	24.82	314	0.064
28	〃	13.15	18.33	33.12	30	13.13	18.33	33.12	24.92	305	0.095
38	40	13.07	18.38	33.21	50	9.67	18.42	33.28	25.69	231	0.158
57	〃	7.37	18.48	33.39	75	6.37	18.56	33.53	26.36	168	0.221
75	〃	5.13	18.56	33.53	100	6.29	18.66	33.71	26.51	154	0.262
77	60	6.14	18.58	33.57	150	6.21	18.67	33.73	26.55	150	0.339
100	〃	6.29	18.66	33.71	200	5.80	18.69	33.77	26.61	144	0.414
146	64	6.25	18.67	33.73	300	4.31	18.70	33.78	26.80	126	0.552
196	〃	5.86	18.69	33.77	400	4.00	18.76	33.89	26.91	116	0.676
246	〃	5.29	18.70	33.78	500	3.75	18.82	34.00	27.02	105	0.790
293	〃	4.33	18.70	33.78	600	3.50	18.86	34.07	27.11	97	0.895
393	〃	4.04	18.76	33.89	800	3.22	18.92	34.07	27.22	86	1.087
492	〃	3.77	18.82	34.00	1000						
586	〃	3.53	18.86	34.07	1200						
730	〃	3.25	18.92	34.18	1500						

Table 3. (Continned)

Station Os 56 (Os 19-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0120-0315	6	9	1957	43°49′N	162°00′E	32	22	03	124	NW5	NNW3	5	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10\triangle st$	$\triangle D$
0		16.3	18.55	33.51	0	16.3	18.55	33.51	24.55	340	0
9	20	16.35	18.53	33.48	10	16.34	18.53	33.48	24.52	343	0.034
19	〃	16.27	18.53	33.48	20	16.23	18.53	33.48	24.55	340	0.068
28	〃	16.07	18.55	33.51	30	13.95	18.56	33.53	25.09	288	0.100
33	49	10.77	18.58	33.57	50	7.57	18.59	33.58	26.23	180	0.147
49	〃	7.57	18.59	33.58	75	7.28	18.60	33.60	26.30	173	0.191
66	〃	7.09	18.60	33.60	100	6.01	18.61	33.61	26.49	155	0.233
141	20	4.94	18.62	33.64	150	4.92	18.62	33.64	26.62	143	0.308
188	〃	4.73	18.62	33.64	200	4.70	18.63	33.66	26.67	138	0.380
216	46	4.67	18.64	33.68	300	4.17	18.67	33.73	26.78	128	0.515
288	〃	4.24	18.66	33.71	400	3.79	18.76	33.89	26.94	113	0.638
360	〃	3.81	18.72	33.82	500	3.67	18.83	34.02	27.05	102	0.749
431	〃	3.78	18.79	33.95	600	3.54	18.88	34.11	27.15	93	0.851
574	〃	3.57	18.86	34.07	800	3.23	18.96	34.25	27.29	80	1.035
724	〃	3.39	18.95	34.24	1000	2.88	18.99	34.31	27.36	73	1.201
880	〃	3.08	18.97	34.27	1200						
1133	〃	2.65	19.00	34.33	1500						

Station Os 57 (Os 20-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1600-1730	6	9	1957	44°00′N	159°58′E	27	05	03	146	WNW1	N1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		14.9	18.31	33.08	0	14.9	18.31	33.08	24.51	344	0
10	11	15.00	18.31	38.08	10	15.00	18.31	33.08	24.50	345	0.035
20	〃	14.91	18.33	33.12	20	14.91	18.33	33.12	24.55	340	0.069
30	〃	9.01	18.47	33.37	30	9.01	18.47	33.37	24.86	310	0.101
49	12	5.83	18.55	33.51	50	4.79	18.55	33.51	26.54	151	0.148
73	〃	4.79	18.55	33.51	75	4.83	18.55	33.51	26.53	152	0.186
98	〃	4.83	18.60	33.60	100	4.71	18.60	33.60	26.61	144	0.223
147	〃	4.80	18.64	33.68	150	4.80	18.64	33.68	26.68	137	0.295
196	〃	3.30	18.64	33.68	200	3.31	18.64	33.68	26.82	124	0.363
271	22	3.41	18.70	33.78	300	3.40	18.73	33.84	26.94	113	0.484
362	〃	3.40	13.79	33.95	400	3.38	18.81	33.98	27.06	101	0.593
452	〃	3.34	18.84	34.04	500	3.30	18.86	34.07	27.14	94	0.693
542	〃	3.26	18.88	34.11	600	3.21	18.89	34.13	27.20	88	0.788
724	〃	3.11	18.91	34.16	800	3.00	18.94	34.22	27.29	80	0.966
908	〃	2.83	18.99	34.31	1000	2.72	19.02	34.36	27.42	67	1.124
1095	〃	2.61	19.05	34.42	1200	2.50	19.05	34.42	27.49	61	1.266
1381	〃	2.31	19.06	34.43	1500						

Table 3. (Continued)

Station Os 58 (Os 21-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0335-0500	7	9	1957	44°00′N	158°00′E	15	f5	62	148	SSE4	ENE1	5	12

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		17.8	18.47	33.37	0	17.8	18.47	33.37	24.08	385	0
10	10	17.61	18.50	33.42	10	17.61	18.50	33.42	24.17	376	0.038
20	〃	17.52	18.52	33.46	20	17.52	10.52	33.46	24.22	371	0.076
30	〃	16.43	18.57	33.55	30	16.43	18.57	33.55	24.32	362	0.112
43	30	7.58	18.43	33.30	50	6.30	18.40	33.24	26.15	188	0.168
65	〃	3.32	18.33	33.12	75	2.87	18.35	33.15	26.44	160	0.211
87	〃	2.18	18.37	33.19	100	2.29	18.40	33.24	26.57	148	0.250
115	40	2.46	18.43	33.30	150	2.41	18.49	33.40	26.69	136	0.321
153	〃	2.40	18.50	33.42	200	2.50	18.56	33.53	26.78	128	0.388
247	50	2.59	18.63	33.66	300	2.69	18.67	33.73	26.92	115	0.510
330	〃	2.75	18.69	33.77	400	2.84	18.72	33.83	26.99	108	0.623
412	〃	2.85	18.72	33.82	500	3.27	18.83	34.02	27.10	98	0.729
495	〃	3.26	18.83	34.02	600	3.42	18.89	34.13	27.17	91	0.827
661	〃	3.54	18.92	34.12	800	3.19	18.96	34.25	27.30	79	1.007
833	〃	3.11	18.97	34.27	1000	2.81	19.02	34.26	27.41	68	1.165
1009	〃	2.80	19.02	34.36	1200	2.53	19.04	34.40	27.47	62	1.309
1287	〃	2.40	19.04	34.40	1500						

Station Os 59 (Os 22-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0830-1026	9	9	1957	43°41′N	155°42′E	31	16	02	132	NW3	SW2	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		15.8	18.30	33.06	0	15.8	18.30	33.06	24.31	363	0
7	44	16.57	18.25	32.97	10	16.47	18.25	32.97	24.05	388	0.038
14	〃	16.38	18.25	32.97	20	16.27	18.24	32.95	24.13	380	0.076
22	〃	16.22	18.24	32.95	30	12.98	18.23	32.94	24.80	316	0.111
36	〃	9.75	18.22	32.92	50	5.51	18.25	32.97	26.04	198	0.163
54	〃	3.70	18.26	32.99	75	2.60	18.30	33.06	26.40	164	0.208
72	〃	2.70	18.30	33.06	100	1.81	18.34	33.13	26.51	154	0.248
108	〃	1.55	18.35	33.15	150	1.91	18.46	33.35	26.68	137	0.322
144	〃	1.85	18.45	33.33	200	2.42	18.56	33.53	26.79	127	0.388
232	40	2.75	18.63	33.66	300	2.97	18.78	33.93	27.05	102	0.503
310	〃	3.00	18.80	33.96	400	3.15	18.86	34.07	27.15	93	0.602
388	〃	3.17	18.86	34.07	500	3.01	18.90	34.14	27.22	86	0.694
468	〃	3.03	18.89	34.13	600	2.94	18.92	34.18	27.26	82	0.782
622	〃	2.93	18.93	34.20	800	2.85	19.01	34.34	27.40	69	0.942
782	〃	2.89	19.01	34.34	1000	2.50	19.09	24.49	27.54	56	1.078
945	〃	2.56	19.09	34.49	1200	2.30	19.09	34.49	27.58	52	1.198
1200	〃	2.30	19.09	34.49	1500						

Table 3. (Continned)

Station Os 60 (Os 23-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1945-2120	9	9	1957	43°41′N	154°00′E	09	07	01	128	E2	SW2	4	11

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^6\triangle$st	$\triangle$D
0		15.6	18.31	33.08	0	15.6	18.31	33.08	24.38	356	0
10	6	15.75	18.30	33.06	10	15.75	18.30	33.06	24.32	362	0.036
20	〃	15.40	18.37	33.19	20	15.40	18.37	33.19	24.40	354	0.072
30	〃	10.68	18.31	33.08	30	10.68	18.31	33.08	25.35	264	0.103
42	33	5.39	18.24	32.95	50	4.65	18.26	32.99	26.14	188	0.148
63	〃	2.92	18.29	33.04	75	2.56	18.30	33.06	26.40	164	0.192
84	〃	2.20	18.30	33.06	100	2.02	18.36	33.17	26.52	153	0.232
106	45	1.90	18.39	33.22	150	2.29	18.57	33.55	26.80	126	0.302
116	〃	1.99	18.48	33.39	200	2.58	18.65	33.69	26.90	117	0.364
141	58	2.02	18.51	33.44	300	2.62	18.69	33.77	26.96	111	0.479
155	〃	2.54	18.64	33.68	400	3.02	18.80	33.96	27.08	99	0.586
190	〃	2.57	18.65	33.69	500	3.20	18.89	34.13	27.20	88	0.682
229	〃	2.61	18.67	33.73	600	3.34	18.95	34.23	27.27	81	0.770
300	〃	2.62	18.69	33.77	800	2.76	18.99	34.31	27.38	71	0.932
408	〃	3.05	18.80	33.96	1000						
546	〃	3.50	18.94	34.22	1200						
782	〃	2.79	18.99	34.31	1500						

Station Os 61 (Os 24-IGY) 1957

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0630-0830	10	9	1957	43°41′N	152°05′E	14	17	60	130	S E 4	S E 1	5	10

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	C (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		12.0	17.99	32.50	0	12.0	17.99	32.50	24.66	329	0
10	11	11.94	18.00	32.52	10	11.94	18.00	32.52	24.70	326	0.033
20	〃	9.77	18.03	32.57	20	9.77	18.03	32.57	25.12	286	0.064
29	〃	4.55	18.20	32.88	30	4.55	18.20	32.88	26.07	195	0.088
50	3	2.47	18.29	33.04	50	2.22	18.29	33.04	26.41	163	0.123
75	〃	1.65	18.40	33.24	75	1.55	18.40	33.24	26.62	143	0.162
100	〃	1.46	18.42	33.28	100	1.53	18.42	33.28	26.65	140	0.197
147	11	1.58	18.47	33.37	150	1.59	18.47	33.37	26.70	135	0.267
196	〃	1.71	18.54	33.49	200	1.74	18.55	33.51	26.82	124	0.332
295	〃	2.33	18.65	33.69	300	2.34	18.66	33.71	26.93	114	0.452
394	〃	2.59	18.75	33.87	400	2.60	18.76	33.89	27.06	101	0.561
492	〃	2.84	18.80	33.96	500	2.86	18.80	33.96	27.10	98	0.663
591	〃	3.00	18.81	33.98	600	2.99	18.82	34.00	27.11	97	0.764
789	〃	2.85	19.00	34.33	800	2.84	19.00	34.33	27.38	71	0.942
988	〃	2.67	19.02	34.36	1000	2.66	19.02	34.36	27.43	66	1.090
1187	〃	2.44	19.02	34.36	1200	2.42	19.02	34.36	27.45	64	1.232
1485	〃	×	19.11	34.52	1500						

9. Data on Wet Displacement Volume and Wet Weight of Plankton Samples collected with North Pacific Standard Net

(北太平洋標準ネット採集によるプランクトン湿排水量及び湿重量)

Vertical hauls were carried out with a North Pacific Standard Net, 45cm × 180cm, conical, made of bolting silk GG 54, having approximately 0.33 mm mesh aperture, from about 150 meters depth (by length of wire run out) once at each hydrographic station.

A flow-meter was mounted at the center of the mouth ring of the net to register the amount of water filtered.

Unusual large organisms such as jellyfish were removed from the samples before they were submitted to the volume measurement, and number of these organisms was counted separately.

Wet displacement volume of the samples was measured by means of aspiration filtering apparatus, and wet weight was obtained by weighting the samples retained on the filter paper of this apparatus.

The data presented are the values in 1000 m^3 of water, except the number of large organisms which were removed before volume measurement was made.

The above measurement and calculation were made at the Plankton Laboratory of the University.

Table 4. Plankton volume data (45cm × 18cm, GG 54, NORPAC

No. of collection	Corresponding No. of hydrographic station	Position	Ship's date	Ship's time	Length of wire run out (m)	Revolutions of flow meter	Volume of water filtered (m^3)
1	Os 1-IGY	46-01N 154-00E	1957 Aug. 26	1410	150	990	24.0
2	Os 2-IGY	46-01N 156-00E	27	0400	150	830	20.4
3	Os 3-IGY	46-01N 158-00E	28	0710	150	987	24.0
4	Os 4-IGY	46-00N 160-00E	28	0825	150	1063	25.8
5	Os 5-IGY	46-10N 161-58E	28	2030	150	1025	24.9
6	Os 6-IGY	46-00N 164-00E	29	0725	150	1164	28.3
7	Os 7-IGY	46-00N 166-00E	29	1810	150	1175	28.5
8	Os 8-IGY	46-00N 168-00E	30	0545	150	1087	26.4
9	Os 9-IGY	46-00N 170-00E	30	1700	150	1488	36.1
10	Os11-IGY	46-00N 174-00E	31	1300	150	1162	28.2
11	Os13-IGY	44-00N 174-00E	Sept. 1	1020	150	1108	26.9
12	Os15-IGY	44-00N 170-00E	3	1920	150	1070	26.0
13	Os16-IGY	44-00N 168-32E	4	1015	150	942	22.9
14	Os17-IGY	44-00N 166-00E	5	0730	150	1945	47.2
15	Os19-IGY	43-49N 162-00E	6	1300	150	1211	29.4
16	Os20-IGY	44-00N 159-58E	7	0330	150	858	20.8
17	Os21-IGY	44-00N 158-00E	7	1500	150	1265	30.7
18	Os22-IGY	43-41N 155-41E	9	2000	150	1868	45.3
19	Os23-IGY	43-41N 154-00E	10	0800	150	1489	36.2
20	Os24-IGY	43-41N 152-00E	10	1900	150	1084	26.3

Standard Net) in 1957 cruise 39-B to the northern North Pacific

Displacement volume per 1000 m^3 (cc)	wet weight per 1000m^3 (gr)	Number of large organisms removed before measurement (in a haul) Jellyfish	Remarks
271	216	20	Comparatively abundant *Calanus plumchrus* and *Sagitta*
294	255	15	Comparatively abundant *Calanus cristatus* and *Euclanus bungii*
63	83	8	Comparatively abundant *Calanus plumchrus* and *Metridia lucens*
155	147	10	Comparatively abundant *Calanus plumchrus* and *Eucalanus bungii*
120	92		Comparatively abundant *Calanus plumchrus* and *C. helgolandicus*
71	49		Comparatively abundant *Calanus helgolandicus*
35	10		〃
76	41		〃
28	8		Comparatively abundant *Calanus plumchrus* and *C. helgolandicus*
35	39		Comparatively abundant *Calanus helolandicus*
74	26	1	〃
38	38		〃
87	39		〃
21	6		〃
68	34		Comparatively abundant *Calanus helgolandicus* and *Metridia lucens*
96	58		〃
33	13		〃
178	154	14	Comparatively abundant *Calanus helgolandicus*, young euphausiids and *Sagitta*
55	39	3	Comparatively abundant *Calanus helgolandicus*
150	150	4	Comparatively abundant *Eucalanus bungii*, *Calanus helgolandicus* and *Themisto* sp.

10. Data on Wet Displacement Volume and Wet Weight of Plankton Samples collected with Fish-Larva Net

(稚魚ネット採集によるプランクトン湿排水量及び湿重量記録)

A fish-larva net, 130cm × 450cm, made of stramin in the anterior 300 cm, and of bolting silk GG 54 in the posterior 150 cm, was towed through approximately the surface water layer at a speed of about 2 knots for 10 minutes. The net was not equipped with flow-meter, so that the data are not available for quantitative studies; here only the relative abundance of catches can be discussed.

Large organisms such as jellyfish and squid larvae were removed from the samples before they were submitted to the measurement of volume and weight; the number of such removed organisms was counted.

Fish larvae contained in the samples were also removed before the measurement. The data on fish larvae are given on pp 30.

Wet displacement of samples was measured with an aspiration filtering apparatus, and then the materials left on the filtering disc of the apparatus were weighted.

The above processing was carried out at the Plankton Laboratory of the University,

Table 5. Plankton volume data (Fish-larva Net) in 1957 cruise 39-B to the northern North Pacific

No. of collection	Position	Ship's date	Ship's time	Displacement volume of total samples in a tow (cc)	Wet weight of total samples in a tow (gr)	Number of large organisms removed before measurement (in a haul)			Remarks
						Jellyfish	Squid	Other	
1	42-43N 146-39E	1957 Aug. 24	1804	1.0	0.9	1			Comparatively abundant *Themisto* and small-sized copepods
2	44-29N 150-44E	25	1746	5.0	6.3	48			Comparatively abundant jellyfishes
3	46-01N 154-42E	26	1832	30.0	24.5	28			Comparatively abundant jellyfishes, small *Themisto* and *Sagitta*
4	46-00N 158-00E	27	1759	4.0	3.7	1			Comparatively abundant small-sized copepods
5	46-00N 166-00E	29	1809	5.0	4.7			1	Comparatively abundant *Themisto* and small-sized copepods
6	46-00N 170-15E	30	1823	13.0	17.5				Comparatively abundant small-sized copepods
7	43-50N 172-35E	Sept. 1	1808	1.0	1	2			Comparatively abundant diatoms and small-sized copepods
8	44-00E 170-00E	3	1755	2.0	1.2	1		1	Comparatively abundant diatoms
9	44-00N 168-28E	4	1823	1.0	1	2			Comparatively abundant small-sized copepods and small *Themisto*
10	43-55N 161-17E	6	1744	6.0	6.6				Comparatively abundant small-sized copepods
11	43-41N 155-42E	9	1957	60.0	46	7			Comparatively abundant *Sagitta* and small euphusiids
12	43-41N 152-05E	10	1843	70.0	66	5			Comparatively abundant *Sagitta* and *Themisto*

11. Data on Fish Larvae collected with Fish Larva Net
(稚魚ネット採集による稚魚記録)

Fish larva net, 130cm in mouth diameter and 450cm in length, was towed at the surface layer at a speed as low as about 2 knots for ten minutes keeping the net exposed to the extent of half of mouth ring above the sea surface.

Identification of fish larvae was made by Shin-ichi Sato and Kiyu Kobayashi.

Table 6. Data on collection of fish larvae in 1957 cruise 39-B to the northern North Pacific

No. of station	Corresdonping No. of hydrographic station	Position	Ship's date (1957)	Ship's time	Fish-larvae collected (Species or group)	Number of individuals
1		42°43′N 146°39′E	Aug. 24	1804	No fish-larva	
2		44°29′N 150°44′E	25	1746	No fish-larva	
3		46°01′N 154°42′E	26	1832	No fish-larva	
4	Os 40 (Os 3-IGY)	46°00′N 158°00′E	27	1759	No fish-larva	
5	Os 44 (Os 7-IGY)	46°00′N 166°00′E	29	1809	No fish-larva	
6	Os 46 (Os 9-IGY)	46°00′N 170°15′E	30	1823	No fish-larva	
7		43°50′N 172°35′E	Sept. 1	1808	No fish-larva	
8	Os 52 (Os15-IGY)	44°00′N 170°00′E	3	1755	No fish-larva	
9		44°00′N 168°28′E	4	1823	No fish-larva	
10		43°55′N 161°17′E	6	1744	No fish-larva	
11	Os 59 (Os22-IGY)	43°41′N 155°42′E	9	1959	*Myctopum affine* (LÜTKEN)	1
12	Os 61 (Os24-IGY)	43°41′N 152°05′E	10	1843	No fish-larva	

12. Data on Oxygen, Phosphate, Silicate, Hydrogen-Ion Concentration
(酸素，燐酸塩，硅酸塩，水素イオン濃度記録)

Hydrogen-ion cocentration, dissolved oxygen, phosphate and silicate were measured aboard the ship by Setsu Saito and Kinshiro Nakao.

Table 6. Data on oxygen, phosphate, silicate, hydrogen-ion concentration in 1957 cruise 39-B to the northern North Pacific

Station Os 38 (Os 1-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Silicate-Si (μg-at./L)
0	0.649	115	8.2	0.27	
10	0.630	111	8.2	0.65	
20	0.794	140	8.2	1.03	
30	0.739	119	8.2	1.43	
50	0.737	117	8.1	1.44	
73	0.681	97	8.0	1.25	
97	0.621	89	8.1	1.88	
146	0.649	91	8.0	1.69	
194	0.523	76	8.1	1.87	
280	0.412	59	7.8	2.85	
376	0.302	43	7.8	2.63	
472	0.202	29	7.8	2.74	
576	0.153	22	7.6	2.95	
776	0.125	19	7.6	3.64	
975	0.173	25	7.6	3.43	
1175	0.130	19	7.5	3.75	
1474	0.147	21	7.8	3.30	

Station Os 39 (Os 2-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Silicate-Si (μg-at./L)
0	0.600	105	8.2	0.45	
10	0.565	98	8.2	1.26	
20	0.898	144	8.1	1.73	
30	0.774	117	8.2	1.44	
50	0.893	131	8.2	2.33	
75	0.774	109	8.0	2.75	
100	0.826	115	8.0	2.78	
150	0.715	100	8.0	2.33	
200	0.549	79	7.9	2.58	
295	0.185	27	7.6	2.59	
394	0.214	32	7.6	2.77	
492	0.201	30	7.6	2.86	
588	0.055	8	7.6	3.05	
786	0.078	12	7.6	2.73	
984	0.103	15	7.6	2.34	
1181	0.263	39	8.0	2.75	
1478	0.160	23	8.0	3.08	

Station Os 40 (Os 3-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Silicate-Si (μg-at./L)
0	0.561	120	8.3	0.83	
10	0.719	131	8.2	1.93	
20	0.670	122	8.1	0.92	
30	0.749	136	8.1	1.00	
50	0.795	120	8.0	1.09	
74	0.741	106	8.0	2.00	
98	0.484	69	7.8	2.20	
148	0.218	32	7.8	2.28	
197	0.042	14	7.4	2.65	
264	0.075	11	7.4	2.35	
352	0.086	13	7.4	2.35	
443	0.070	10	7.4	3.34	
534	0.046	7	7.6	2.50	
717	0.031	5	7.4	2.70	
905	0.070	10	7.6	3.04	
1097	0.078	11	7.6	2.85	
1388	0.080	12	7.8	2.35	

Station Os 41 (Os 4-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Silicate-Si (μg-at./L)
0	0.572	105	8.2	0.49	
10	0.612	111	8.2	0.40	
20	0.690	126	8.1	0.49	
30	0.850	138	8.1	1.04	
50	0.656	97	8.1	1.10	
74	0.719	104	8.1	1.17	
98	0.734	105	8.0	1.18	
148	0.396	58	8.0	1.34	
197	0.213	31	7.7	1.76	
253	0.155	23	7.8	2.10	
340	0.112	17	7.8	2.19	
426	0.079	11	7.8	2.04	
516	0.077	11	7.6	2.20	
700	0.057	8	7.6	3.12	
888	0.058	8	7.6	3.22	
1078	0.100	15	7.6	2.19	
1369	0.102	15	7.6	2.92	

Table 6. (Cotinued)

Station Os 42 (Os 5-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate $^{-p}$ (μg-at./L)	Silicate-Si (μg-at./L)
0	0.566	104	8.2	0.49	
10	0.576	105	8.2	0.40	
20	0,565	104	8.1	0.40	
30	0.599	100	8.1	0.66	
50	0.690	112	8.1	0.49	
74	0.519	82	8.1	0.49	
99	0.622	97	8.1	0.66	
139	0.632	99	8.0	0.49	
185	0.599	95	8.0	0.32	
240	0.577	91	8.0	0.55	
324	0.354	54	8.0	1.25	
410	0.599	91	7.9	1.17	
494	0.440	66	8.0	1.33	
670	0.282	42	7.8	—	
855	0.086	13	7.8	2.20	
1050	0.111	16	7.8	2.22	
1344	0.105	15	7.9	2.10	

Station Os 43 (Os 6-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate $^{-p}$ (μg-at./L)	Silicate-Si (μg-at./L)
0	0.589	109	8.2	0.32	
10	0.553	104	8.2	0.15	
20	0.539	100	8.2	0.17	
30	0.638	111	8.1	0.23	
50	0.648	104	8.1	0.66	
74	0.609	94	8.1	0.92	
99	0.530	82	8.1	0.75	
132	0.594	92	8.1	0.83	
177	0.544	85	8.0	1.80	
290	0.357	57	8.0	1.68	
386	0.252	38	7.9	1.50	
482	0.129	20	7.9	1.68	
578	0.130	20	7.9	2.19	
772	0.103	15	7.8	1.80	
968	0.077	11	7.8	1.68	
1164	0.102	15	7.8	3.22	
1456	0.125	18	7.8	2.19	

Station Os 44 (Os 7-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate $^{-p}$ (μg-at./L)	Silicate-Si (μg-at./L)
0	0.541	99	8.2	0.05	
10	0.623	111	8.2	0.15	
20	0.634	115	8.2	0.02	
30	0.656	116	8.1	0.32	
46	0.895	142	8.1	0.41	
70	0.741	116	8.1	0.43	
93	0.738	110	8.0	0.83	
123	0.674	100	8.0	1.00	
164	0.523	78	7.8	1.17	
208	0.447	67	7.8	1.51	
280	0.235	48	8.0	2.20	
354	0.221	39	7.8	2.02	
432	0.204	31	7.8	1.50	
594	0.153	23	7.6	3.01	
765	0.102	15	7.6	2.30	
945	0.097	14	7.6	1.69	
1228	0.117	17	7.6	1.70	

Station Os 45 (Os 8-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate $^{-p}$ (μg-at./L)	Silicate-Si (μg at./L)
0	0.599	106	8.2	0.22	
10	0.817	145	8.2	0.03	
19	0.809	143	8.2	0.23	
29	0.555	98	8.1	0.15	
49	0.609	99	8.1	0.05	
74	0.639	100	8.1	0.57	
98	0.563	88	8.1	0.49	
143	0.543	86	7.0	0.75	
191	0.415	64	8.2	1.50	
290	0.312	46	8.0	1.93	
386	0.170	25	7.9	1.95	
484	0.133	20	7.8	1.98	
579	0.100	15	7.8	2.02	
772	0.092	13	7.8	1.92	
967	0.092	13	7.6	1.85	
1161	0.077	11	7.6	1.50	
1452	0.065	10	7.6	2.91	

Table 6. (Cotinued)

Station Os 46 (Os 9-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Silicate-Si (μg-at./L)
0	0.611	108	8.2	0.23	12
10	0.588	103	8.2	0.32	15
19	0.614	107	8.2	0.40	10
29	0.603	106	8.1	0.49	24
42	0.616	105	8.1	0.66	26
64	0.550	84	8.1	0.89	27
85	0.523	78	8.1	0.68	32
111	0.586	87	8.0	0.85	58
149	0.308	46	8.0	1.85	55
160	0.307	46	7.4	2.18	62
210	0.237	35	7.8	2.70	60
260	0.167	25	7.8	3.04	68
310	0.142	21	7.8	2.91	70
410	0.046	7	7.8	2.03	70
515	0.099	15	7.6	2.35	76
620	0.090	14	7.6	2.52	80
780	0.079	11	7.6	2.35	110

Station Os 48 (Os 11-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Silicate-Si (μg-at./L)
0	0.596	106	7.8	1.00	
10	0.567	100	8.2	0.75	
20	0.614	107	8.1	0.76	
30	0.477	84	8.1	0.66	
49	0.646	100	8.1	1.17	
73	0.621	95	8.1	1.25	
97	0.584	92	8.0	1.63	
130	0.494	88	8.0	1.17	
173	0.341	53	8.0	1.25	
270	0.265	40	8.0	2.10	
360	0.182	27	8.0	1.93	
450	0.140	21	7.8	2.20	
540	0.109	16	7.8	2.30	
720	0.096	14	7.8	1.63	
905	0.040	6	7.6	2.10	
1096	0.118	17	7.6	2.20	
1386	0.053	7	7.6	1.84	

Station Os 49 (Os 12-IGY)

Depth (m)	O_2 (mg at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Silicate-Si (μg-at./L)
0	0.599	108	8.2	0.05	
10	0.527	95	8.2	0.41	
20	0.558	100	8.2	0.35	
30	0.565	101	8.2	0.38	
48	0.611	100	8.1	0.66	
71	0.623	99	8.1	0.49	
95	0.611	97	8.1	0.83	
138	0.593	92	8.0	0.49	
184	0.380	59	8.0	1.09	
276	0.316	48	8.0	1.17	
367	0.150	22	7.9	1.60	
459	0.207	31	7.9	1.77	
492	0.102	15	7.8	1.68	
657	0.134	20	7.8	1.69	
830	0.081	12	7.8	1.60	
1010	0.075	11	7.8	1.85	
1295	0.070	10	7.8	2.35	

Station Os 50 (Os 13-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Silicate-Si (μg-at./L)
0				0.49	
10				0.02	
20				0.40	
30				0.32	
49				0.74	
74				0.77	
98				1.00	
130				0.58	
173				0.74	
246				0.92	
327				2.20	
409				1.50	
490				1.43	
660				1.68	
835				1.50	
1013				1.93	
1290				2.00	

Table 6. (Cotinued)

Station Os 52 (Os 15-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Silicate-Si (μg-at./L)
0	0.518	113		0.02	
10	0.582	106		0.15	
20	0.559	101		0.18	
30	0.554	100		0.23	
50	0.532	85		0.40	
75	0.657	102		0.45	
100	0.590	91		0.50	
150	0.570	88		0.55	
200	0.438	67		0.83	
296	0.220	33		1.60	
395	0.167	25		1.68	
493	0.133	20		1.77	
592	0.057	9		1.94	
790	0.075	11		2.25	
988	0.089	14		2.16	
1187	0.091	13		2.00	
1486	0.100	15		1.95	

Station Os 53 (Os 16-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Silicate-Si (μg-at./L)
0	0.519	94		0.23	
10	0.592	105		0.05	
20	0.453	81		0.32	
30	0.601	100		0.24	
50	0.623	97		0.49	
75	0.599	93		0.66	
100	0.553	86		0.83	
150	0.594	92		0.85	
200	0.403	62		1.34	
299	0.228	34		1.94	
398	0.208	31		2.03	
497	0.116	17		2.10	
596	0.054	8		3.32	
795	0.076	11		2.10	
993	0.068	10		1.85	
1192	0.127	19		1.50	
1490	0.145	21		1.85	

Station Os 54 (Os 17-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Silicate-Si (μg-at./L)
0	0.544	100		0.83	
9	0.582	107		0.57	
19	0.547	100		0.23	
28	0.541	99		0.32	
38	0.553	101		0.35	
57	0.610	100		1.08	
75	0.529	97		1.20	
77	0.622	84		1.17	
100	0.592	95		2.03	
146	0.548	88		1.93	
196	0.543	86		1.50	
246	0.434	68		1.84	
293	0.352	54		2.23	
393	0.239	36		2.03	
492	0.168	24		3.23	
586	0.112	17		2.24	
730	0.116	17		2.18	

Station Os 56 (Os 19-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Silicate-Si (μg-at./L)
0	0.518	101		0.23	
9	0.547	106		0.05	
19	0.544	106		0.03	
28	0.543	105		0.24	
33	0.646	114		0.92	
49	0.554	91		1.32	
66	0.536	87		1.00	
141	0.547	85		1.67	
188	0.494	76		1.51	
216	0.454	70		1.60	
288	0.366	56		1.93	
360	0.319	48		1.95	
431	0.226	34		1.76	
574	0.135	20		1.95	
724	0.113	17		2.02	
880	0.103	15		1.76	
1133	0.088	13		1.84	

Table 6. (Cotinued)

Station Os 57 (Os 20-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Silicate-Si (μg-at./L)
0	0.643	122		0.15	
10	0.548	104		0.02	
20	0.554	105		0.26	
30	0.648	110		0.40	
49	0.657	104		0.24	
73	0.500	77		0.48	
98	0.444	68		1.00	
147	0.362	56		1.51	
196	0.279	42		1.92	
271	0.187	28		1.77	
362	0.148	22		2.03	
452	0.159	24		2.10	
542	0.086	13		1.85	
724	0.089	13		2.20	
908	0.092	14		2.10	
1095	0.112	16		2.12	
1381	0.131	19		2.23	

Station Os 58 (Os 21-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Silicate-Si (μg-at./L)
0	0.532	106		0.25	
10	0.538	107		0.10	
20	0.523	104		0.24	
30	0.558	93		0.40	
43	0.686	113		0.49	
65	0.686	134		1.10	
87	0.672	97		1.00	
115	0.619	90		1.18	
153	0.518	76		1.43	
247	0.286	42		1.72	
330	0.294	30		2.10	
412	0.299	31		2.20	
495	0.173	26		1.93	
661	0.089	13		1.85	
833	0.101	15		2.35	
1009	0.136	20		2.03	
1287	0.142	21		1.68	

Station Os 59 (Os 22-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Stlicate-Si (μg-at./L)
0	0.540	104		0.24	
7	0.537	104		0.15	
14	0.541	105		0.25	
22	0.543	105		0.40	
36	0.657	112		0.75	
54	0.725	109		0.82	
72	0.683	100		0.92	
108	0.670	99		1.00	
144	0.505	73		1.25	
232	0.233	36		1.66	
310	0.155	23		1.78	
388	0.103	15		1.92	
468	0.124	19		2.20	
622	0.067	10		2.35	
782	0.101	15		2.20	
945	0.113	16		2.14	
1200	0.165	24		2.10	

Station Os 60 (Os 23-IGY)

Depth (m)	O_2 (mg-at./L)	O_2 Sat. (%)	pH	Phosphate-P (μg-at./L)	Silicate-Si (μg at./L)
0	0.540	103		0.32	
10	0.552	106		0.24	
20	0.520	100		0.40	
30	0.624	109		0.75	
42	0.699	109		1.23	
63	0.681	100		1.68	
84	0.643	93		1.86	
106	0.643	93		1.87	
116	0.452	65		2.03	
141	0.451	65		1.92	
155	0.299	44		2.28	
190	0.443	65		1.87	
229	0.429	64		1.95	
300	0.214	31		2.53	
408	0.193	29		2.84	
546	0.129	20		2.78	
782	0.109	16		2.78	

Table 6. (Cotinued)

Station Os 61 (Os 24-IGY)

Depth (m)	O_2 (mg-at./*L*)	O_2 Sat. (%)	pH	Phosphate-p (μg-at./*L*)	Silicate-Si (μg-at./*L*)
0	0.573	102		0.75	10
10	0.584	103		0.48	15
20	0.634	109		0.83	22
29	0.672	102		1.18	32
50	0.646	94		1.42	40
75	0.600	89		1.25	45
100	0.579	82		1.50	50
147	0.538	77		1.60	58
196	0.417	60		2.18	69
295	0.268	39		2.20	76
394	0.199	29		2.70	69
492	0.160	23		2.75	70
591	0.079	14		2.60	100
789	0.078	12		2.80	110
988	0.135	20		2.80	115
1187	0.099	14		2.90	130

13. Data on Currents measured by G.E.K.
（ＧＥＫによる測流記録）

At 43 stations surface current was measured by G.E.K. under sponsorship of ship's officers at every six-hour-interval.

Droop correction and calculation of current speed and direction were made by Y, Akiba.

As to the vertical intensity of earth's magnetic force, H.O. chart No. 1702 was used.

Table 7. Data on currents measured by GEK in 1957 cruise 39-B of the "Oshoro Maru"

Serial No.	Greenwich mean time		Latitude	Longitude	Depth	Current	
	Day	Time h m	′ N S	′ E W	m	Dir.	speed KT
Os 57-01	8 24	1 04	42 20′ N	145 10′ E	0	220	0.6
Os 57-02		6 06	42 34	146 05	0	187	0.4
Os 57-03	25	0 11	43 52	149 30	0	243	0.3
Os 57-04		6 07	44 13	150 11	0	152	1.0
Os 57-05		12 26	44 47	151 38	0	180	1.2
Os 57-06		18 06	45 22	152 46	0	285	0.5
Os 57-07	26	0 17	45 55	153 48	0	279	0.5
Os 57-08		6 10	46 01	154 10	0	262	1.1
Os 57-09		12 25	46 01	155 15	0	207	1.3
Os 57-10		18 51	46 01	156 00	0	190	0.5
Os 57-11	27	0 14	46 01	157 10	0	244	0.3
Os 57-12		6 08	45 55	157 39	0	93	0.5
Os 57-13		18 07	46 00	159 32	0	90	0.4
Os 57-14	28	0 08	46 00	160 19	0	360	0.6
Os 57-15		6 07	46 00	161 35	0	79	0.4
Os 57-16		12 11	46 08	162 19	0	97	0.6
Os 57-17		18 09	46 02	163 37	0	351	0.3
Os 57-18	29	0 15	46 00	164 34	0	311	0.6
Os 57-19		6 10	46 00	165 52	0	90	0.6
Os 57-20		12 15	46 00	166 51	0	248	0.4
Os 57-21		18 44	46 00	168 00	0	217	0.4
Os 57-22	30	0 11	46 00	169 09	0	120	0.6
Os 57-23		18 11	46 00	172 00	0	180	0.1
Os 57-24	31	0 15	46 00	174 00	0	256	0.3
Os 57-25		18 13	44 22	174 38	0	20	1.1
Os 57-26	9 1	0 38	44 00	173 45	0	220	0.7
Os 57-27	2	12 19	43 30	172 00	0	75	1.3
Os 57-28		23 40	43 33	170 42	0	345	0.6
Os 57-29	3	6 06	43 56	170 07	0	278	0.2
Os 57-30		12 14	44 00	169 22	0	45	0.2
Os 57-31	4	12 22	44 00	167 15	0	26	0.6
Os 57-32		18 10	44 00	166 12	0	226	0.5
Os 57-33	6	18 33	44 00	159 56	0	64	0.2
Os 57-34	7	0 10	44 00	158 38	0	145	0.3
Os 57-35	9	18 30	43 41	154 14	0	254	1.4
Os 57-36	10	0 31	43 41	159 19	0	45	0.8
Os 57-37		6 07	43 41	152 07	0	184	1.0
Os 57-38		12 13	43 32	151 25	0	307	1.5
Os 57-39		18 17	43 17	150 13	0	155	0.9
Os 57-40	11	0 15	43 03	149 02	0	302	1.5
Os 57-41		6 06	42 52	147 48	0	113	1.4
Os 57-42		12 14	42 38	146 36	0	206	2.2
Os 57-43	12	6 15	42 09	144 10	0	60	0.3

14. Data on Light Absorption of Sea Water *in situ*
(現場海水の光吸収度測定記録)

The turbidity-meter used consists of a light source box, a photocell box and an indicator. A parallel light beam projected from the light source of a tungsten lamp, passing through a green filter and the sea water of 48cm length *in situ*, reahces a celenium photocell. The electric current induced in the photocell circuit is read on the indicator on the boat.

The measurments were made by S. Nishizawa.

Figures in the table represent the absorption coefficent per meter of the sea water for the green light, of which the center of gravity and half value width are 535mμ and 70mμ respectively.

Table 8. Data on light absorption of sea water in 1957 cruise 39-B of the "Oshoro Maru"

Depth (m)	Os 15	Depth	Os 16	Depth	Os 17	Depth	Os 19	Depth	Os 20	Depth	Os 21	Depth	Os 22	Depth	Os 23	Depth	Os 24
3	0.584	0	>0.600	0	0.556	0	0.591	0	>0.600	0	>0.600	2	0.277	2	0.509	1	0.577
7	0.583	7	0.597	7	0.552	10	0.584	10	>0.600	9	>0.600	5	0.215	5	0.507	5	0.563
9	0.579	18	0.535	15	0.528	20	0.584	20	>0.600	18	0.593	10	0.215	10	0.504	10	0.563
13	0.576	20	0.508	25	0.468	25	0.578	24	>0.600	22	0.583	15	0.315	15	0.501	12	0.559
15	0.573	23	0.467	29	0.473	27	0.497	26	0.589	26	0.596	20	0.325	17	0.486	15	0.554
17	0.569	25	0.449	33	0.419	29	0.489	28	0.564	30	0.561	24	0.361	19	0.462	17	0.495
19	0.558	28	0.416	39	0.372	38	0.484	30	0.537	32	0.542	29	0.349	21	0.437	18	0.480
21	0.546	29	0.395	41	0.342	45	0.472	32	0.532	32	0.526	34	0.363	25	0.421	20	0.422
22	0.541	31	0.370	48	0.260	52	0.472	34	0.517	35	0.514	39	0.269	30	0.403	22	0.422
26	0.524	33	0.330	50	0.251	57	0.472	39	0.478	44	0.463	44	0.233	34	0.356	25	0.372
27	0.494	38	0.325	50	0.242	61	0.459	48	0.418	50	0.388	49	0.206	37	0.337	30	0.305
33	0.314	49	0.251	64	0.197	64	0.423	59	0.374	54	0.361	56	0.167	44	0.344	40	0.233
35	0.233	54	0.224	74	0.188	70	0.349	68	0.353	60	0.339	64	0.102	48	0.269	48	0.210
37	0.188	65	0.188			85	0.305	77	0.339	60	0.325	76	0.094	59	0.228	57	0.179
46	0.188	76	0.188					88	0.327	70	0.315	82	0.073	66	0.206	65	0.146
55	0.163	87	0.188					98	0.324	94	0.305	94	0.061	73	0.179	75	0.141
64	0.132	93	0.180					118	0.315			114	0.061	77	0.163	89	0.136
71	0.132	97	0.180					147	0.315			141	0.061	89	0.136	97	0.128
92	0.126	99	0.163											112	0.128	107	0.119
117	0.122															114	0.119
																134	0.110
																143	0.107

II

THE "HOKUSEI MARU" CRUISE 3 TO THE NORTH OF NEW GUINEA IN THE SOUTH PACIFIC, NOVEMBER 1957-FEBRUARY 1958

北星丸　第3次航海　ニューギニヤ北方海域

昭和32年11月～昭和33年2月

1. Cruise Report
（航海報告）

Departure from Hakodate	Nov. 21, 1957	函館出港
Arrival at Shimizu	Nov. 24, 1957	清水入港
Departure from Shimizu	Dec. 14, 1957	清水出港
Arrival at Misaki	Dec. 15, 1957	三崎入港
Departure from Misaki	Dec. 17, 1957	三崎出港
Arrival at Hachijyo Jima	Dec. 20, 1957	八丈島仮泊
Departure from Hachijyo Jima	Dec. 21, 1957	八丈島出港
First tuna long-line fishing	Dec. 28, 1957	マグロ延縄開始
Last tuna long-line fishing	Jan. 14, 1958	マグロ延縄終了
Arrival at Kagoshima	Jan. 24, 1958	鹿児島入港
Departure from Kagoshima	Jan. 27, 1958	鹿児島出港
Arrival at Aburatsu	Jan. 28, 1958	油津入港
Departure from Aburatsu	Jan. 30, 1958	油津出港
Arrival at Takamatsu	Feb. 1, 1958	高松入港
Departure from Takamatsu	Feb. 3, 1958	高松出港
Arrival at Tokyo	Feb. 5, 1958	東京入港
Departure from Tokyo	Feb. 9, 1958	東京出港
Arrival at Hakodate	Feb. 12, 1958	函館入港
Covered 7540 miles in total 85 days at sea	（総航程 7540浬，航海日数 85日）	

Hokusei Maru cruise 3 to the north of New Guinea

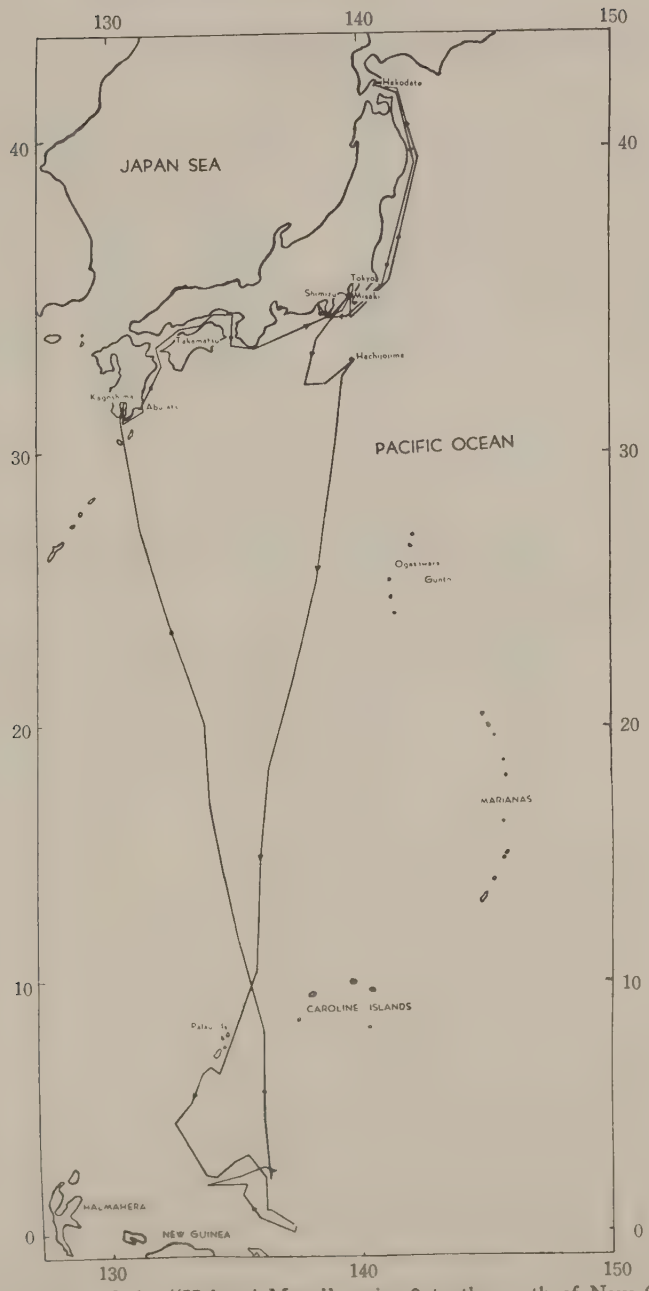

Fig. 1. Track of the "Hokusei Maru" cruise 3 to the north of New Guinea in the South Pacific, November 1957–February 1958

2. Members of Staff Aboard
(乗船者)

Captain	Seikichi Mishima	船長	三島清吉
Crew			
Chief Officer	Shoichi Yamamoto	一等航海士	山本昭一
Second Officer	Shingo Takenaga	二等航海士	武長進午
Third Officer	Mitsufusa Sato	三等航海士	佐藤光房
Chief Engineer	Yuhachi Yanagiya	機関長	柳谷勇八
First Engineer	Minoru Fujita	一等機関士	藤田実
Second Engineer	Yoshiteru Hirai	二等機関士	平井是照
Chief Wireless Operator	Shiro Noguchi	主席通信士	野口四郎
and 13 men		外 13 名	
Instructor			
Assistant Professor	Motokazu Ueno	助教授	上野元一
Cadets			
9 cadets of Advanced Course of Pelagic Fishery		遠洋漁業科特設専攻科学生9名	
Total 32 persons		総員 32 名	

3. Specification of Hydrographic Stations
(海洋観測地点)

Table 1. Hydrographic stations in 1957–1958 cruise 3 of the "Hokusei Maru" to the north of New Guinea in the South Pacific

No. of station	Ship's time		Greenwich mean time		Position	
	Date	Hour	Date	Hour	Latitude	Longitude
1	12-27	10-00	12-27	01-00	11°-34′ N	135°-52′ E
2	12-28	09-00	12-28	00-00	9°-20′	135°-30′
3	12-29	09-00	12-29	00-00	6°-59′	134°-43′
4	12-30	09-00	12-30	00-00	6°-28′	133°-45′
5	12-31	09-00	12-31	00-00	4°-58′	133°-00′
6	1- 2	09-00	1- 2	00-00	2°-45′	134°-55′
7	1- 3	09-00	1- 3	00-00	1°-52′	136°-14′
8	1- 4	09-00	1- 4	00-00	0°-35′	136°-25′
9	1- 5	09-00	1- 5	00-00	0°-20′	135°-20′
10	1- 6	09-00	1- 6	00-00	0°-35′	135°-28′
11	1- 7	09-00	1- 7	00-00	1°-33′	135°-30′
12	1- 8	09-00	1- 8	00-00	1°-25′	135°-24′
13	1- 9	09-00	1- 9	00-00	1°-33′	134°-04′
14	1-10	09-00	1-10	00-00	2°-35′	135°-21′
15	1-11	09-00	1-11	00-00	2°-16′	136°-11′
16	1-12	09-00	1-12	00-00	2°-20′	136°-31′
17	1-13	09-00	1-13	00-00	2′-11′	136°-33′
18	1-14	09-00	1-14	00-00	2°-05′	136°-26′
19	1-15	09-00	1-15	00-00	4°-11′	136°-09′
20	1-16	09-00	1-16	00-00	7°-36′	135°-57′

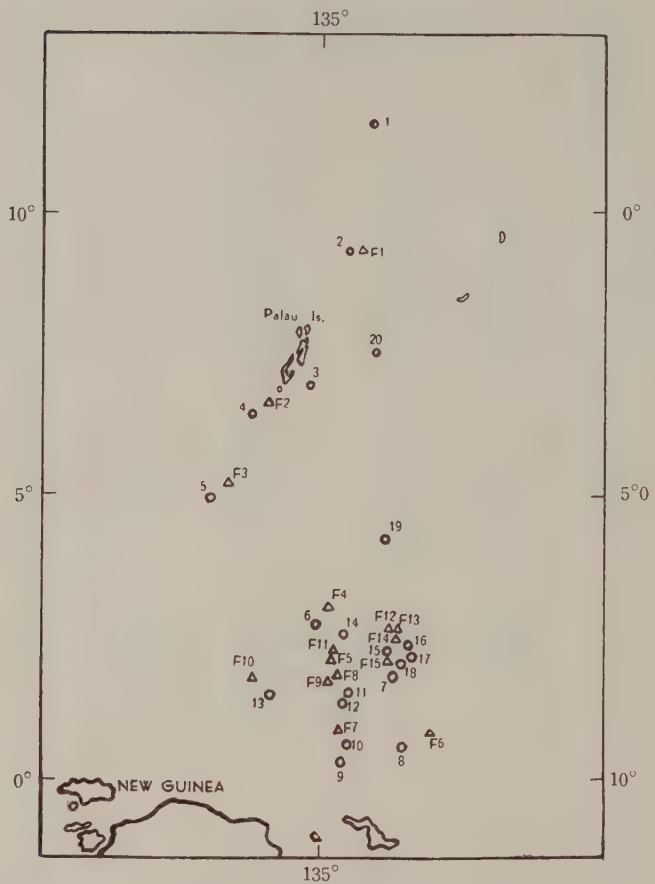

Fig. 2. Hydrographic stations and fishing points in 1957–1958 cruise 3 to the north of New Guinea in the South Pacific

4. Items of Observatios and Procedure at Sea
(調査項目及び海上作業)

Meteorological observations (気象観測)

Every-three-hour interval, covering the whole course

Hydrographic cast (海洋観測)

Measurment of temperature and salinity was made at 20 stations covering depths from the surface to 300 meters.

A submarine recorder (Bathythermograph) was used for measuring temperature.

Tuna long-line fishing (鮪延縄試験)

Fifteen casting were made in the Pacific Ocean in the north of New Guinea.

Biological studies on fish caught by long-line fishing (魚体生物学的研究)

5. Data on Meteorological Observations
(気象観測記録)

Observations were made under sponsorship of ship's officers at every-three-hour interval at sea.

Y'Y' : Data and time in Greenwich Mean Time (Universal Time)

Movement of wind direction (dd) and speed (ff) were measured by means of aerovane type anemometer set on the top of pole on bridge at the height of 6 meters above the sea surface.

Measurments of air temperature (TT) and dew point temperature (T_dT_d) were made by means of Asmann aspiration dry and wet bulb thermometer set on the upper deck at the height of 5 meters above the sea surface.

$T_tT_tT_t$: Temperature of surface water (00.0 C).

X : Uncertain.

Table 2. Data on meteorological observations in 1957–1958 cruise 3 to the north of New Guinea in the South Pacific

Y′Y′	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	dwdw	$T_tT_tT_t$
12 22	2	282	390	09	4	27	02	97	02	0	186	18	4	6	×	×	×	2	06	56	11	27	208
22	2	277	389	12	5	27	04	97	02	0	190	19	4	6	×	×	×	2	04	55	13	27	215
22	2	270	388	15	3	22	06	97	01	0	177	19	2	×	×	×	×	7	13	54	13	22	210
22	2	267	387	18	7	22	06	96	03	1	170	19	7	×	×	×	×	6	07	54	13	22	214
22	2	262	387	21	7	22	07	96	02	1	170	19	6	8	×	2	1	5	00	55	14	22	220
23	2	258	386	00	8	27	08	97	03	2	188	21	8	4	×	×	×	2	18	54	15	27	227
23	2	252	384	03	8	29	11	97	02	2	174	22	8	6	×	0	×	7	14	54	14	29	239
23	2	248	384	06	8	29	14	97	03	2	172	20	8	×	×	2	×	5	02	57	14	29	240
23	2	242	383	09	8	34	08	96	02	2	182	18	8	×	×	2	×	2	10	60	15	31	234
23	2	247	382	12	8	36	08	96	02	2	188	20	8	×	×	2	×	2	06	52	16	36	215
23	2	232	380	15	8	36	10	97	02	2	188	21	8	6	×	0	×	4	00	55	15	36	233
23	2	227	380	18	8	36	10	96	02	2	175	21	8	6	×	0	×	7	13	56	18	36	242
23	2	222	379	21	8	05	08	97	02	2	172	21	4	6	×	2	×	5	03	58	19	05	255
24	2	217	378	00	8	05	10	97	02	2	186	22	4	6	×	2	×	2	14	57	20	05	257
24	2	220	375	03	8	07	10	97	02	2	180	24	6	5	×	1	×	8	06	54	20	07	254
24	2	215	374	06	4	07	12	97	01	1	166	24	2	2	×	1	×	7	14	55	23	07	265
24	2	208	373	09	4	05	12	97	01	0	168	24	2	2	×	1	×	3	02	55	18	05	264
24	2	204	372	12	4	05	14	97	02	0	170	25	2	1	×	1	×	2	02	53	24	05	260
24	2	199	371	15	4	05	14	97	02	0	165	25	2	1	×	1	×	0	05	53	25	05	264
24	2	194	371	18	1	05	12	97	01	0	152	16	2	5	×	0	×	7	10	71	12	05	264
24	2	189	370	21	3	05	14	97	03	0	155	25	2	5	×	2	×	3	03	52	23	05	262
25	2	190	365	00	4	07	14	97	02	0	164	27	3	8	×	2	×	2	09	50	27	07	267
25	2	185	365	03	5	06	14	97	02	0	148	29	4	8	×	2	×	8	16	52	29	07	270
25	2	180	365	06	3	04	12	97	01	0	130	27	2	×	×	1	×	7	18	52	25	07	288
25	2	176	365	09	3	04	12	97	02	0	133	27	2	×	×	1	×	3	03	51	25	07	265
25	2	169	365	12	3	04	12	97	02	0	148	27	2	0	×	1	×	2	15	00	27	07	270
25	2	165	365	15	3	04	12	97	02	0	140	27	2	0	×	1	×	6	08	00	27	07	270
25	2	160	367	18	4	07	14	96	02	0	122	26	4	4	×	×	×	7	18	51	25	07	267
25	2	155	362	21	3	07	10	97	02	0	128	26	3	4	×	2	×	2	06	53	25	07	272

Table 2. (Cotinued)

Y′Y′	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_tT_tT_t$
12 26	2	150	360	00	5	07	12	97	02	0	138	27	3	1	×	2	×	3	10	51	27	07	274
26	2	149	361	03	5	13	12	97	02	0	125	28	3	1	×	2	×	7	13	02	28	13	274
26	2	143	360	06	4	11	12	98	02	0	109	28	3	4	×	2	×	7	16	02	24	11	276
26	2	140	360	09	4	07	12	97	02	0	110	27	3	4	×	2	×	5	01	00	24	07	276
26	2	134	360	12	3	09	10	97	02	0	123	27	2	5	×	1	×	2	13	00	25	09	272
26	2	129	359	15	3	09	10	97	01	0	120	27	3	5	×	0	×	7	03	00	24	09	274
26	2	123	359	18	2	09	10	97	01	0	110	27	2	0	×	2	×	8	10	00	27	09	274
26	2	119	359	21	2	09	10	97	02	0	120	27	2	0	×	2	×	2	10	01	27	09	277
27	2	114	108	06	3	07	11	97	02	0	106	29	2	5	×	3	×	7	12	02	24	07	276
27	2	357	366	09	3	07	15	97	02	0	110	28	3	5	×	1	×	3	04	01	24	07	276
27	2	104	357	12	3	07	14	97	02	0	118	27	3	×	×	2	×	2	08	50	26	07	275
27	2	099	358	15	3	07	15	97	02	0	115	27	3	×	×	2	×	6	03	00	27	07	274
27	2	094	358	18	7	07	14	96	02	0	110	26	2	1	×	×	×	7	15	52	24	07	274
27	2	093	359	21	5	07	12	97	03	0	101	27	5	4	×	2	×	3	01	00	24	09	274
28	2	089	359	00	2	09	14	97	01	0	120	28	2	1	×	×	×	2	19	00	24	09	276
28	2	089	359	03	2	09	14	97	02	0	112	28	2	8	×	×	×	8	08	01	25	09	277
28	2	091	356	09	7	04	12	97	03	1	102	27	4	5	×	2	×	4	00	51	25	02	277
28	2	086	355	12	3	02	16	96	01	2	114	27	3	0	×	2	×	2	12	50	24	02	277
28	2	082	354	15	3	04	14	97	02	0	111	27	3	0	×	2	×	7	15	50	25	04	278
28	2	072	352	18	2	04	14	97	02	0	096	27	2	5	×	×	×	3	05	51	24	04	278
28	2	072	349	21	2	04	11	97	02	0	101	27	2	5	×	0	0	3	05	50	25	04	277
29	2	070	347	00	2	04	12	97	02	0	110	29	2	5	×	0	0	1	09	02	26	04	277
29	2	065	346	03	7	04	12	97	03	1	100	27	7	5	×	×	×	8	10	51	27	04	277
29	2	063	344	06	7	04	12	97	02	2	083	27	7	5	×	×	×	7	17	52	23	04	281
29	2	066	342	09	6	36	12	97	01	2	088	26	3	7	×	3	9	3	05	54	24	36	282
29	2	066	339	12	6	02	14	97	02	2	105	28	4	6	×	7	×	2	17	00	25	02	278
29	2	066	339	15	5	02	10	96	01	1	105	27	5	5	×	×	×	0	0	50	24	02	278
29	2	066	339	18	5	02	12	96	01	0	093	26	5	5	×	×	×	7	12	52	25	02	276
29	2	065	338	21	3	02	02	96	01	0	100	26	3	3	×	0	1	3	07	52	23	02	278

Table 2. (Cotinued)

Y′Y′	Q	$L_aL_aL_a$	$L_bL_bL_b$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_b	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	dwdw	$T_tT_tT_t$
12 30	2	065	338	00	0	02	08	97	01	0	110	27	0	0	×	0	0	1	10	50	24	02	278
30	2	060	336	06	5	04	10	97	03	0	085	28	5	8	×	0	0	7	14	01	24	04	280
30	2	054	335	12	2	04	05	97	01	0	135	28	2	5	×	×	×	3	45	00	27	04	280
30	2	049	333	15	3	07	08	97	03	0	104	28	2	2	×	0	8	7	31	00	25	04	282
30	2	045	333	18	4	04	12	97	03	0	085	28	3	8	×	0	8	7	19	00	26	04	282
31	2	045	333	00	3	04	10	97	02	0	110	28	3	1	×	1	8	2	15	01	26	04	280
31	2	045	333	03	4	06	10	97	02	0	100	28	3	1	×	1	0	7	10	00	26	06	281
31	2	045	333	06	4	06	14	97	02	0	080	28	3	1	×	3	8	7	20	00	25	06	282
31	2	047	330	15	4	06	16	97	02	0	095	27	2	×	×	2	8	×	×	52	26	06	280
31	2	043	331	18	6	06	13	96	25	1	082	27	5	6	×	2	0	7	13	51	26	06	277
31	2	037	334	21	6	07	12	97	01	1	090	25	6	6	×	2	0	3	10	55	25	06	277
1 1	2	033	334	00	6	09	12	96	03	1	110	28	6	6	×	×	0	2	18	02	28	06	277
1	2	030	339	03	7	18	12	96	25	8	115	23	8	6	×	2	0	0	05	59	23	16	274
1	2	025	338	06	7	11	08	96	18	2	091	24	7	6	×	2	×	7	24	57	23	11	280
1	2	025	340	09	7	07	08	96	25	2	100	24	7	6	×	×	×	2	09	56	23	07	278
1	2	022	349	12	7	04	10	96	02	2	114	27	5	6	×	1	×	2	14	51	24	04	281
1	2	022	342	15	6	04	06	98	02	2	112	27	6	6	×	×	×	8	02	52	24	04	280
1	2	022	342	18	7	02	06	98	02	2	100	25	7	6	×	×	×	7	12	57	23	02	285
2	2	027	349	00	7	31	02	97	02	2	125	27	4	6	×	3	8	×	×	52	24	31	282
2	2	027	349	03	6	16	01	97	02	2	112	29	3	6	×	2	8	5	13	00	25	16	287
2	2	030	347	12	6	04	06	97	01	2	118	28	4	×	×	2	8	×	×	50	26	04	284
2	2	026	353	15	3	02	10	96	02	0	110	28	3	3	×	×	×	8	08	50	25	02	282
2	2	025	359	18	3	02	10	97	02	0	090	28	3	×	×	2	×	7	20	51	25	02	288
2	2	017	365	21	6	04	10	97	03	1	115	28	4	6	×	2	1	2	25	01	26	04	280
3	2	019	362	03	7	04	08	97	03	2	105	29	7	6	×	3	0	7	10	01	26	04	287
3	2	019	362	06	7	33	10	97	03	2	082	27	6	6	×	2	×	7	23	53	26	02	285
3	2	017	363	12	6	33	10	97	02	2	082	27	3	6	×	3	8	×	×	51	26	02	285
3	2	014	362	15	6	33	08	97	02	2	102	29	5	8	×	1	0	1	02	52	26	33	288
3	2	012	363	18	7	33	06	97	03	2	085	28	6	8	×	1	0	7	17	51	26	33	286

Table 2. (Cotinued)

Y′Y′		Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_tT_tT_t$
1	4	2	008	362	00	8	27	08	96	25	2	125	26	8	6	×	×	×	2	30	55	26	27	287
	4	2	008	362	03	8	25	08	96	25	2	124	26	8	6	×	×	×	8	01	55	26	25	285
	4	2	008	363	06	8	27	09	97	02	2	101	27	6	6	×	3	×	7	23	53	26	27	286
	4	2	005	365	12	8	27	06	97	02	2	110	28	8	6	×	×	×	2	10	51	26	27	287
	4	2	003	367	15	8	31	06	96	21	2	120	27	8	6	×	×	×	1	10	52	27	31	285
	4	2	000	373	18	6	33	10	96	02	2	101	27	6	6	×	5	9	6	19	52	27	33	284
	5	2	006	370	00	6	29	18	97	01	2	132	27	3	6	×	1	1	2	29	51	26	29	282
	5	2	008	370	03	8	31	16	96	21	2	123	25	8	6	×	×	×	8	09	55	24	31	282
	5	2	012	366	06	8	31	16	96	02	2	110	27	8	6	×	×	×	6	13	53	24	31	285
	5	2	013	361	09	7	33	14	97	02	2	116	27	5	6	×	1	×	4	06	53	24	33	284
	5	2	014	357	12	6	33	16	97	02	2	130	27	4	6	×	1	×	2	14	52	25	33	283
	5	2	015	355	15	7	33	11	97	02	2	133	27	5	6	×	1	×	0	03	50	26	33	278
	5	2	015	354	18	7	33	13	97	02	2	122	27	4	4	×	3	8	8	11	53	25	33	283
	6	2	015	354	00	6	33	08	97	02	2	120	27	6	6	×	0	0	7	01	52	25	33	281
	6	2	015	354	06	6	33	08	97	25	2	113	27	5	5	×	1	0	7	35	53	25	36	282
	6	2	015	354	12	6	36	08	96	25	9	134	28	5	5	×	1	0	3	11	51	26	36	280
	6	2	015	354	15	3	36	08	96	25	9	130	27	2	2	×	1	0	0	40	53	23	36	280
	6	2	016	354	18	2	36	08	97	02	2	118	27	2	2	×	0	0	7	60	52	26	36	280
	7	2	015	354	00	4	34	08	97	0	8	140	27	2	3	×	1	0	1	11	52	26	34	282
	7	2	015	354	03	3	31	08	97	0	0	125	29	1	2	×	1	0	6	15	02	28	36	280
	7	2	015	354	06	3	31	08	97	0	0	105	28	1	2	×	1	0	8	20	50	27	36	282
	7	2	019	353	18	6	31	09	97	25	2	112	25	4	5	×	2	0	3	04	56	24	31	277
	8	2	016	354	00	2	36	08	97	03	8	135	28	1	1	×	1	0	1	23	51	25	36	278
	8	2	018	353	06	2	36	06	98	03	0	102	28	0	0	×	1	1	7	17	51	25	36	280
	8	2	019	352	12	2	36	06	97	03	0	125	27	1	1	×	1		3	23	52	26	36	279
	8	2	019	346	15	2	34	06	97	02	0	124	27	1	2	×	0	0	6	01	52	25	34	278
	8	2	019	343	18	4	34	02	97	03	0	108	27	2	3	×	1		6	16	52	25	34	275
	9	2	016	343	00	1	27	02	97	02	0	130	28	1	1	×	0	0	2	22	50	25	27	278
	9	2	018	342	03	1	27	05	97	02	0	110	30	1	1	×	0	0	6	20	03	26	27	279

Table 2. (Cotinued)

Y′Y′	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_tT_tT_t$
1 9	2	017	341	09	1	29	00	97	02	0	112	28	1	1	×	0	0	2	02	51	25	34	284
9	2	018	341	12	0	29	06	97	02	0	122	27	0	0	×	0	0	1	10	52	26	29	280
9	2	020	344	15	0	0	0	97	02	0	122	27	0	0	×	0	0	4	00	52	26	0	278
9	2	022	348	18	1	0	0	97	02	0	113	27	1	1	×	0	0	6	09	53	25	0	278
9	2	021	350	21	1	25	02	97	02	0	120	26	1	1	×	0	1	1	07	53	25	25	277
10	2	020	353	00	1	0	0	98	02	0	130	29	1	1	×	0	1	1	10	02	26	0	280
10	2	020	354	03	1	0	0	98	02	0	125	31	1	1	×	1	1	7	05	05	28	0	284
10	2	020	354	06	3	0	0	99	02	0	099	31	1	1	×	1	1	6	26	05	28	0	284
10	2	020	354	09	1	36	01	97	02	0	103	28	1	1	×	0	0	3	04	51	26	36	286
10	2	020	354	12	1	34	05	97	02	0	130	28	0	0	×	0	1	1	27	00	27	34	279
10	2	026	353	15	1	36	4	97	02	0	122	28	1	1	×	0	0	6	08	00	26	36	275
10	2	026	353	18	2	36	4	97	02	0	110	27	2	2	×	0	0	6	12	52	26	36	275
10	2	026	358	21	1	02	6	97	02	0	118	28	1	1	×	0	0	3	08	51	27	36	279
11	2	023	362	03	2	36	6	97	02	0	118	29	1	1	×	1	1	4	00	01	26	36	284
11	2	023	362	09	2	36	10	97	02	0	110	28	2	1	×	1	1	6	08	52	27	36	283
11	2	023	362	12	2	36	8	97	02	0	125	28	2	1	×	1	1	3	15	00	27	36	280
11	2	023	362	15	2	36	8	97	02	0	118	28	1	1	×	1	0	8	07	50	27	36	282
11	2	028	356	18	1	36	8	97	02	0	105	27	1	1	×	0	0	8	13	51	26	36	278
11	2	026	360	21	2	36	6	98	02	0	120	27	2	2	×	0	1	3	15	51	26	36	277
12	2	022	365	00	2	36	5	98	02	0	128	29	1	1	×	0	1	2	08	01	27	36	280
12	2	022	365	12	×	31	6	96	01	0	109	27	0	0	×	0	0	6	19	51	27	31	279
12	2	022	365	15	2	31	10	97	03	0	104	27	1	1	×	0	1	6	05	51	27	31	278
12	2	022	365	21	5	34	6	97	03	0	006	27	5	4	×	1	1	8	98	52	24	34	277
13	2	023	365	03	2	27	7	98	02	1	096	30	1	1	×	1	1	3	90	03	25	27	280
13	2	023	365	06	2	27	10	98	02	1	072	30	1	1	×	1	1	7	24	03	27	27	282
13	2	023	365	09	2	27	10	97	02	0	084	27	0	0	×	1	1	2	12	51	26	27	282
13	2	023	365	15	0	27	10	97	02	0	095	27	0	0	×	0	0	2	11	52	25	27	279
13	2	023	365	18	2	25	10	97	02	0	084	27	2	2	×	1	1	8	11	51	26	25	276
13	2	023	365	21	3	25	10	97	03	0	091	28	2	2	×	1	1	3	07	51	26	25	278

Table 2. (Cotinued)

	Y′Y′	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_tT_tT_t$
1	14	2	022	365	00	4	25	10	97	60	1	110	29	3	2	×	1	1	1	19	02	28	25	278
	14	2	021	364	03	5	25	10	98	03	8	096	27	4	3	×	1	1	8	14	51	27	29	278
	14	2	022	367	11	3	25	10	98	02	0	100	27	2	1	×	1	0	2	04	51	27	25	277
	14	2	023	368	12	3	25	10	98	02	0	100	28	2	2	×	1	1	4	00	00	27	25	274
	14	2	027	367	15	2	25	10	97	02	0	078	28	2	2	×	0	0	6	22	51	26	25	279
	14	2	030	366	18	4	27	12	97	60	0	085	28	2	2	×	0	0	3	07	51	26	27	278
	14	2	036	361	21	4	27	9	97	02	8	098	28	2	2	×	1	0	3	13	51	26	27	282
	15	2	040	361	00	4	27	10	97	02	8	110	30	2	2	×	1	0	2	12	02	27	27	284
	15	2	046	361	03	4	25	9	98	02	0	100	31	2	2	×	1	0	7	10	04	27	27	284
	15	2	053	361	06	2	25	10	98	02	0	080	31	1	1	×	1	0	7	20	04	28	25	284
	15	2	054	360	09	2	25	7	97	02	0	080	29	1	1	×	1	0	4	00	02	25	25	282
	15	2	058	359	12	2	25	6	97	02	0	093	27	1	1	×	1	0	1	13	52	26	25	281
	15	2	063	359	15	8	25	6	97	02	0	090	26	6	6	×	×	×	6	03	54	26	25	278
	15	2	068	358	18	8	25	8	96	02	2	078	26	6	6	×	×	×	6	12	55	26	25	278
	15	2	071	357	21	7	25	10	96	02	2	082	27	6	6	×	×	×	2	04	51	26	25	280
	16	2	076	358	00	3	25	10	97	02	2	100	28	2	1	×	1	1	2	18	00	27	25	281
	16	2	081	361	03	3	25	10	97	02	2	090	27	2	1	×	1	0	8	10	00	27	25	277
	16	2	086	360	06	3	25	10	97	02	0	068	29	2	1	×	×	1	6	22	02	28	25	276
	16	2	090	359	09	5	23	16	97	03	0	080	28	4	4	×	1	0	3	12	01	27	23	277
	16	2	094	358	12	4	23	14	97	02	1	087	28	3	3	×	1	0	2	07	01	27	23	274
	16	2	098	357	15	3	23	10	97	02	1	091	28	2	2	×	0	0	2	04	00	27	23	274
	16	2	102	354	18	1	23	8	97	02	0	081	27	1	1	×	0	0	6	10	51	26	23	274
	16	2	106	353	21	6	20	11	97	03	0	081	27	5	5	×	×	×	4	00	00	27	20	270
	17	2	112	351	00	8	20	10	97	03	0	100	28	6	5	×	1	×	0	19	00	27	23	268
	17	2	117	350	03	8	20	10	97	03	2	092	28	6	5	×	×	×	7	08	03	27	23	263
	17	2	121	350	06	6	16	12	97	0	2	074	28	5	4	×	1	×	6	18	03	26	31	266
	17	2	125	350	09	7	14	4	97	02	2	092	27	6	5	×	1	×	2	18	01	26	13	266
	17	2	129	349	12	7	05	8	96	03	2	102	26	6	6	×	×	×	2	10	51	25	05	265
	17	2	133	348	15	6	05	8	96	03	2	110	26	5	5	×	×	×	2	08	51	25	05	266

Table 2. (Cotinued)

Y′Y′	Q	LaLaLa	LoLoLo	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	dwdw	$T_tT_tT_t$
1 17	2	136	347	18	8	05	20	95	03	2	100	24	6	6	×	×	×	8	10	56	24	05	270
17	2	138	347	21	8	05	24	95	02	2	109	24	6	6	×	×	×	3	09	55	23	05	265
18	2	140	347	00	8	02	24	95	02	2	135	24	6	6	×	×	×	1	26	54	23	02	263
18	2	146	345	03	8	02	22	95	02	2	145	23	6	6	×	×	×	2	10	56	22	02	264
18	2	151	344	06	8	02	24	95	01	2	115	25	6	6	×	×	×	8	30	54	23	02	264
18	2	155	344	09	8	02	26	95	01	2	130	24	6	6	×	×	×	3	15	56	23	02	264
18	2	158	344	12	8	02	30	95	01	2	152	25	6	6	×	×	×	2	22	52	24	02	264
18	2	160	344	15	7	05	28	95	02	2	164	25	6	6	×	×	×	1	12	54	23	05	266
18	2	162	344	18	2	05	26	96	01	2	152	24	1	1	×	1	×	7	12	55	23	05	264
18	2	166	344	21	5	05	20	97	01	2	160	24	4	4	×	1	×	3	08	54	23	05	262
19	2	169	341	00	4	05	24	97	01	1	166	25	3	3	×	1	×	2	06	53	23	05	264
19	2	173	341	03	4	05	24	97	01	1	160	25	3	2	×	1	×	6	06	53	23	05	264
19	2	177	341	06	4	05	20	97	01	0	149	25	3	2	×	1	1	6	11	53	24	05	265
19	2	177	340	09	4	05	20	96	02	0	157	24	3	1	×	1	×	3	08	55	23	05	266
19	2	181	339	12	3	05	20	96	02	0	171	24	3	2	×	1	×	1	14	56	23	05	265
19	2	185	339	15	3	05	18	96	02	0	176	23	2	2	×	1	0	1	05	56	23	05	265
19	2	189	339	18	2	07	16	96	01	0	170	23	2	1	×	1	0	6	06	56	22	07	263
19	2	194	340	21	4	07	16	97	02	1	176	23	3	2	×	1	0	3	06	57	22	07	266
20	2	198	340	00	3	05	14	98	02	1	199	25	2	1	×	1	1	1	23	00	24	07	250
20	2	202	338	03	2	07	10	98	02	0	188	25	2	1	×	1	1	6	11	00	24	07	250
20	2	205	336	06	1	09	7	98	02	0	177	26	1	1	×	0	0	6	11	21	25	09	257
20	2	209	335	09	6	09	6	98	03	1	185	24	6	6	×	×	×	3	08	54	22	09	253
20	2	213	334	12	5	09	6	98	01	2	200	23	4	3	×	1	1	2	15	54	22	09	250
20	2	217	332	15	4	09	6	97	01	2	203	23	3	2	×	1	1	1	03	55	22	09	250
20	2	219	331	18	4	07	12	97	01	1	203	23	3	2	×	1	1	4	00	55	22	07	249
20	2	221	329	21	3	07	10	97	01	1	210	23	3	2	×	1	1	3	07	55	22	07	245
21	2	232	325	00	2	09	10	98	01	0	232	22	1	1	×	0	0	2	22	00	21	09	218
21	2	236	324	03	1	09	10	99	01	0	222	22	1	1	×	0	0	8	10	01	21	09	218
21	2	240	322	06	1	09	6	98	01	0	213	22	1	1	×	0	0	6	09	51	19	09	219

Table 2. (Cotinued)

	Y'Y'	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_BT_B	T_dT_d	d_wd_w	$T_tT_tT_t$
1	21	2	244	321	09	2	07	6	97	01	0	223	20	1	1	×	0	0	3	10	53	18	07	213
	21	2	246	321	12	1	05	4	97	01	0	240	20	1	1	×	0	0	2	17	54	17	05	214
	21	2	253	318	15	1	05	4	97	01	0	238	19	1	1	×	0	0	7	02	56	16	05	213
	21	2	257	317	18	1	36	6	97	01	0	239	18	1	1	×	0	0	2	01	56	15	36	216
	21	2	262	316	21	1	36	5	98	01	0	236	18	1	1	×	0	0	7	03	55	15	36	208
	22	2	268	315	00	1	36	6	98	01	0	252	19	1	1	×	0	0	3	16	55	16	36	210
	22	2	272	314	03	1	34	10	99	01	0	240	18	1	1	×	0	0	8	12	57	16	34	214
	22	2	276	312	06	7	34	7	97	03	02	225	17	6	6	×	2	×	7	15	55	16	34	199
	22	2	280	311	09	8	34	7	96	03	02	230	16	6	6	×	1	×	3	05	59	14	34	200
	22	2	284	311	12	8	34	8	96	03	02	242	14	6	6	×	1	×	2	12	63	13	34	200
	22	2	288	310	15	8	34	12	96	02	02	233	13	6	6	×	1	×	8	09	65	12	34	200
	22	2	292	309	18	8	36	20	96	02	02	226	11	6	6	×	2	×	6	07	71	10	36	214
	22	2	296	309	21	8	36	20	96	02	02	226	11	6	6	×	2	×	4	00	71	8	36	216
	23	2	298	308	00	8	36	20	96	02	02	240	7	6	6	×	1	×	7	14	80	7	36	219
	23	2	299	307	03	8	36	26	97	02	02	242	8	6	6	×	1	×	1	02	78	8	36	218
	23	2	302	307	06	6	36	30	97	01	02	228	7	5	4	×	2	×	8	14	74	6	36	188
	23	2	305	307	09	8	34	26	96	02	02	235	6	6	6	×	2	×	3	07	75	4	34	189
	23	2	308	306	12	8	34	28	96	02	02	245	5	6	6	×	1	×	2	10	76	3	34	180
	23	2	312	307	15	4	34	26	96	02	01	250	3	3	2	×	1	×	1	05	79	2	34	171
	23	2	315	306	18	4	34	20	96	03	01	247	4	3	2	×	1	×	7	03	76	1	34	168

6. Data on Temperature and Salinity
(温度塩分記録)

Temperature measurement was made by means of Bathythermograph.
Double titration for chlorinity, calculation of depths, interpolation of data were made by H. Koto.

Table 3. Temperatur and salinity data in 1957～'58

Station	1	2	3	4	5	6	7	8	9
Date	Dec. 27	Dec. 28	Dec. 29	Dec. 30	Dec. 31	Jan. 2	Jan. 3	Jan. 4	Jan. 5
Time	10－00	09－00	09－00	09－00	09－00	09－00	09－00	09－00	09－00
Lat. N	11－34	09－20	06－59	06－28	04－58	02－45	01－52	00－35	00－20
Long. E	135－52	135－30	134－43	133－45	133－00	134－55	136－14	136－25	135－20
Weather	b	b	b	b c	b	b c	b c	r	b c
Wind direction	E N E	E	N E	N N E	N E	N N W	N N W	W	W N W
Wind force	3	4	3	3	3	1	4	3	5
Atom. pressure (mb.)	1013.8	1012.0	1011.0	1011.0	1011.0	1012.5	1011.5	1012.5	1013.2
Air temperature (°C)	27.0	28.0	28.8	27.5	28.6	27.5	28.6	26.0	27.2
Transparency (m)						25	23	18	
Colour of water						2			

Depth (m)	T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)
0	28.0	34.69	28.0	34.70	28.5	34.72	28.5	34.51	28.5	34.90	28.5	34.22	29.2	34.52	29.0	34.49	29.0	34.51
10	28.0	34.65	28.0	34.61	28.5	34.54	28.5	34.45	28.5	34.58	28.6	34.38	29.2	34.67	29.0	34.54	29.0	34.47
20	28.0	34.65	28.0	34.61	28.5	34.54	28.5	34.45	28.5	34.58	28.6	34.49	29.1	34.59	29.0	34.58	29.0	34.49
30	28.0	34.69	28.0	34.61	28.5	34.54	28.5	34.46	28.5	34.58	28.0	34.59	28.3	34.70	29.0	34.58	29.0	34.51
50	28.0	34.69	28.0	34.61	28.2	34.56	26.7	34.54	28.5	34.56	25.6	34.59	27.5	34.88	28.3	34.60	27.2	34.92
75	28.0	34.69	28.0	34.65	23.2	34.54	21.7	34.90	23.2	34.85	24.8	34.88	26.2	35.08	24.7	34.81	25.0	35.44
100	26.4	34.85	24.6	34.99	20.6	34.94	18.8	34.79	19.2	34.76	24.0	35.35	23.6	35.19	23.7	35.46	23.2	35.34
150	20.8	34.79	18.2	34.74	15.7	34.67	13.2	34.63	12.5	34.51	18.8	35.39	21.1	35.50	21.0	35.32	21.0	35.37
200	15.4	34.51	14.3	34.61	12.7	34.60	11.3	34.72	10.5	34.49	15.7	34.87	16.8	35.26	16.7	35.03	17.6	
250		34.41				34.56				34.47		34.90		34.81				
270							9.0		9.2		11.2		13.5				14.0	
300			9.0														9.2	

cruise 3 to the north of New Guinea

10	11	12	13	14	15	16	17	18	19	20
Jan. 6	Jan. 7	Jan. 8	Jan. 9	Jan. 10	Jan. 11	Jan. 12	Jan. 13	Jan. 14	Jan. 15	Jan. 16
09 - 00	09 - 00	09 - 00	09 - 00	09 - 00	09 - 00	09 - 00	09 - 00	09 - 00	09 - 00	09 - 00
00 - 35	01 - 33	01 - 25	01 - 33	02 - 35	02 - 16	02-19.6	02 - 11	02 - 50	04 - 11	07 - 36
135 - 28	135 - 30	135 - 24	134 - 35	135 - 21	136-11.2	136 - 31	136 - 33	136 - 26	136 - 09	135 - 57
c	b c	b	b	b	b	b	b	b c	b c	b
NNW	NNW	N	W	0	NNE	N	W	WNW	WSW	WSW
3	2	3	1	0	2	2	3	3	3	4
1014.0	1014.0	1013.5	1013.0	1013.0	1012.4	1012.8	1011.2	1011.0	1011.0	1010.0
27.0	27.0	27.8	28.0	29.0	28.6	28.7	27.9	28.8	29.5	27.5
20	17	22	29	19	26	25	25	19	25	25
			3						2	2

T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)	T (°C)	S (‰)
28.5	34.49	28.5	35.68	28.1	34.61	28.0	34.65	28.5	34.72	28.8	34.63	28.6	35.03	28.2	34.99	28.1	34.90	28.7		27.7	34.56
28.5	34.45	28.5	34.52	28.1	34.58	27.8	34.58	27.7	34.54	28.5	34.58	28.6	34.67	28.2		28.1	34.76	28.7	34.56	27.7	34.54
27.7	34.45	28.5		28.0	34.63	27.4		27.3	34.83	28.2	34.81	28.6	34.74	27.6	34.65	27.2	34.96	28.7	34.56	27.7	34.58
27.6	34.96	28.0	34.65	27.8	34.61	25.5	34.89	26.8	35.07	27.5	34.89	28.0	34.92	27.0	34.98	26.7	35.07	28.7	34.58	27.7	34.54
27.5	35.01	27.3	34.56	26.9	34.91	25.1	34.85	26.7	35.14	26.5	35.08	26.3	35.16	25.8	35.10	25.6	34.99	26.2	34.69	27.7	34.56
25.3	35.14	26.9	34.81	26.8	35.25	25.4	35.07	25.7	35.26	24.7	35.23	25.7	35.16	25.2	35.08	25.5	34.98	23.7	34.88	25.0	34.76
23.1	35.25	23.1	34.99	22.9	35.43	24.5	35.12	23.7	35.39	23.6	35.44	23.9	35.43	23.4	35.23	24.2	34.97	20.7	34.88	20.3	34.81
22.0	35.41	22.2	35.48	22.2	35.43	18.2	35.34	22.2	35.35	21.0	35.43	21.0	35.23	21.0	35.46	21.2	35.43	13.5	34.54	14.2	34.63
17.8	35.01	18.4		16.9		17.0	35.16	14.5	34.67	18.7	34.00	16.0	34.79	17.4	35.21	17.7	35.25	10.5	34.45	11.9	34.60
							34.81		34.69		34.40		34.76		34.97		34.69		34.49		34.56
14.5		14.9		14.0		12.5		12.5		11.0		11.1		12.4		12.0		9.3		9.6	
		11.7		11.6		11.5		11.3													

7. Data on Tuna Long-Line Fishing
(鮪延縄試験記録)

100 to 200 Hachi (baskets) of long-line was used. One Hachi (basket) contains 249 meters of long-line with 4 hooks. The depth at which hooks were hung was usually 80-110 meteres. The distance between hooks was 50 metres. As baits refrigerated sauries were used.
Operation of long-line was supervised by S. Mishima (Captain) and deck officers. All hands of crew and cadets were engaged in operation.

The fish caught with long-line were;

Neothunnus macropterus (Temminck & Schlegel), Yellowfin, キハダ
Parathunnas mebachi (Kishinouye), Big-eyed tuna, メバチ
Istiophorus orientalis (Temminck & Schlegel), Sail fish, バショウカジキ
Makaira mitsukurii (Jordan & Snyder), Striped marlin, マカジキ
Makaira mazara (Jordan & Snyder), Black marlin, Mazara, クロカワカジキ, マサキ
Xiphias gladius (Linnaeus), Swordfish, メカジキ
Tetrapturus angustirosteris (Tanaka), Beloner, Brevirostris, フウライカジキ
Carcharinus spp., Shovelnose and allies, ヒラガシラ類
Sphyraena spp., Barracuda, カマス類
Coryphaena hippurus Linné, Dolphin, シイラ
Scombero morus, Spanish mackerel, サワラ
Alepidosaurus aesculapius Bean, Handsaw-fish, ミズウオ
Prionace glanca (Linnaeus), Great Blue Shark, ヨシキリザメ
Isurus glaucus (Müller & Henle), Bonito shark, アオザメ
Alopias vulpinus (Bonnaterre), Thresher, オナガザメ
Carcharhinus gangeticus (Müller & Henle), Ganges shark, メジロザメ

Table 4. Data on tuna long-line fishing in 1957-'58

No. of fishing			1	2	3	4	5	6
Date			Dec. 28	Dec. 30	Dec. 31	Jan. 2	Jan. 3	Jan. 4
Time		Line set	0540～0725	0530～0810	0515～0745	0515～0735	0513～0732	0513～0728
		Line haul	1245～1630	1300～1920	1330～2040	1330～2000	1330～2000	1300～1851
Position of line set		Latitude (N)	09-20	06-41	05-15	03-05	02-11	00-52
		Longitude (E)	135-41	134-00	133-20	135-05	136-09	136-52
Direction of line set			280～270	220	220	200	165	155～110
Length of long-line used (Hachi)			110	199	200	200	200	200
Tuna and allied fish	Number of individual fish hooked	Yellowfin キハダ		1		2	4	5
		Big-eyed tuna メバチ		2	4	2	1	
		Sail fish バショウカジキ						2
		Mazara クロカワカジキ			1			
		Striped marlin マカジキ						
		Beloner フウライカジキ	2					
		Sword fish メカジキ						
		Bonito カツオ						
		Tuna was ate by shark サメクイ		1	2	34	9	6
	Catch in individual fish per 100 hooks		0.45	0.50	0.87	4.74	1.75	1.62
Other fishes hooked (individuals)		Great blue shark ヨシキリ	9	9	1	16	3	1
		Ganges shark メジロザメ			1	4	3	3
		Bonito shark アオザメ				2		
		Thresher shark オナガザメ		7				
		Dolphin シイラ		2		1	1	1
		Spanish mackerel サワラ		2				
		Barracudas カマス				3	4	4
		Handsaw fish ミズウオ				2	1	1

cruise 3 to the north of New Guinea

7	8	9	10	11	12	13	14	15	Total
Jan. 6	Jan. 7	Jan. 8	Jan. 9	Jan. 10	Jan. 11	Jan. 12	Jan. 13	Jan. 14	
0510～0733	0508～0730	0510～0730	0515～0745	0508～0725	0512～0730	0510～0745	0508～0725	0517～0750	
1330～2000	1300～2020	1330～2020	1330～1950	1400～2003	1415～2025	1400～2010	1420～2030	1230～1910	
00-57	01-53	01-45	01-50	02-20	02-39	02-38	02-31	02-12	
135-20	135-20	135-20	133-48	135-13.7	136-11.2	136-20	136-21.3	136-10	
160	150	150	135	180	180	160	150	90	
200	200	200	200	200	200	200	200	200	
18	27	18	5	10	25	24	10	12	
2	1	2	2	3	3	6	14	4	
3	1	1		1	1	1			
	1			1					
						1			
					1	1			
23	37	13	2	10	17	25	19	8	
5.75	8.37	4.25	1.12	3.12	5.87	7.25	5.37	3.00	
4	5	2	5	5	4	2	4	8	
10	2	2	3	1	1	1	1		
	3		1			2	1	1	
3	1					3			
					1		1		
1	2	2		1	1		3		
1	2		3	3	2		3		

8. Data on Measurement of Biological Characters of Fish caught by Long-Line Fishing

(魚体の生物学的測定記録)

Measurement was made by deck officers and compilation of table was made by M. Ueno.

Table 5. Data on measurement of fish caught by long-line fishing

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content		Remarks
1	Beloner	135		M			d			
	〃	140		F	3		d	イカ トビウオ	cuttll fish flying fish	
2	Big-eyed tuna	145	49	M	2		a			
	〃	148	52	F	1	250	a	イカ，多し メバルの小	cuttle fish (abundant)	
	〃	150	52	F	1	280	a	〃		
	Yellowfin	140	45	M	3		a	イカ ユーファシヤ 多し	cuttle fish, Euphausia (abundant)	
3	Big-eyed tuna	150	53	M	4		d	サビ多数		
	〃	150	49	M	2		d	空胃	empty	
	〃	140	49	M	1	100	a	甲イカの小多し サビ	small cuttle fish (abundant)	
	〃	135	45	F	1	250	a			
	〃	125	38	M	1		d	甲イカの小 アジの小 多し	small cuttle fish, pampano (abundant)	
	〃	120	38	F	1	200	a	甲イカ	cuttle fish	
	Mazara	210	110	F	1		a	空胃	empty	
4	Big-eyed tuna	90	15	F	1		a	イカ	cuttle fish	
	〃	145	53	F	1	230	a	イカ，小魚	cuttle fish, young fish	
	〃	145	53	F	1	350	a	イカ，ユーファシヤ	cuttle fish, Euphasia	
	Yellowfin	145	53	M	2	270	d			
	〃	125	30	F	3	480	a	イカ	cuttle fish	
	〃	130	34	F	3	450	a	イカ	〃	

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content		Remarks
5	Big eyed tuna	125	30	F	3	630	a	イカ，ユーファシヤ ミズウオ	cuttle fish, Euphasia, Handsaw fish	
	Yellowfin	135	48	M	2	250	d			
	〃	135	48	M	2		a	イカ タチの小	cuttle fish,	
	〃	130	33	M	4		a	イカ	〃	
	〃	140	41	M	4		d	イカ	〃	
	〃	135	38	M	4		d	イカ	〃	
	〃	85	7	M	1		d	イカ，ユーファシヤ	cuttle fish, Euphasia	
	Sword fish	57	2							
6	Yellowfin	135	38	M	2		a	イカ	cuttle fish,	
	〃	125	30	F	2		d	イカ，タチの小，ユーファシヤ 小魚	cuttle fish, Euphausia, young fish	
	〃	120	27	M	2		d			
	〃	130	36	M	1		d			
	〃	75	8							
	〃	130	33	F	3	540	a	イカ，小魚 ユーファシヤ	cuttle fish, young fish Euphausia	
	〃	115	21	M	1		a	空胃	empty	
	〃	85	12							
	Sail fish	168	27	F	3	300	d	空胃	empty	体表面に寄生虫数ケあり
	〃	174	27	M	1		d	イカ アジの小	cuttle fish	
	〃	180	32	M	1		a	イカ，小魚	cuttle fish, young fish	
7	Big-eyed tuna	75	7							

Taale 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content		Remarks
7	Big-eyed tuna	135	43	M	1		a	空胃	empty	
	Yellowfin	115	21	M	1		d	空胃	empty	
	〃	80	6				d			
	〃	65	5				a			
	〃	70	7				a			
	〃	70	6				a			
	〃	135	39	M	1		d	アジ，小魚 ユーファシヤ	young fish, pampano Euphausia	
	〃	70	5				a			
	〃	70	5							
	〃	130	24	M	1		a			
	〃	125	23	F	2	400	a	アジ，イカ ユーファシヤ	cuttle fish, pampano Euphausia	
	〃	125	23	F	3	450	a	アジ(小)イカ ユーファシヤ	cuttle fish Euphausia	
	〃	115	23	M	1		a	イカ 小魚	cuttle fish young fish	
	〃	130	41	M	1		a	小魚	young fish	
	〃	120	23	M	1		a	イカ，アジ(小)フグ(小) ユーファシヤ	cuttle fish Euphausia	
	〃	125	26	F	3	650	a	イカ，アジ(小) ユーファシヤ	cuttle fish Euphausia	
	〃	125	26	F	3		a			
	〃	75	7							
	〃	125	37	M	2		a	イカ	cuttle fish	
	〃	85	9							
	〃	115	24	M	1		a	小魚	young fish	

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content		Remarks
7	Yellowfin	95	3	M	1		d	アジ(小)イカ ユーファシヤ	cuttle fish, pampano Euphausia	
	〃	115	24	F	3	400	d	イカ フグ(小)	cuttle fish	
	〃	115	23	M	1		d	空胃	empty	
	〃	120	24	M	1		d	イカ，小魚	cuttle fish young fish	
	〃	120	26	F	3	450	a	イカ アジ(小)	cuttle fish	
	〃	115	26	M	1		d	空胃	empty	
	〃	130	32	M	1		a	イカ，アジ(中) ミナムシ	cuttle fish	
	〃	120	24	F	2	500	a			
	〃	110	26	F	2	350	a	アジ(小中)		
	〃	105	26	F	2		a			
	〃	100	19	M	2		a	アジ(中)多し		
	〃	110	23	F	3		d	アジ(小) イカ，小魚	cuttle fish young fish	
	Sail fish	175	24	F	3	2500	d	アジ(大)		
	〃	170	23	M	1		d	アジ		
	〃	190	24	F	3	1400	d	フグ(大) 小魚	young fish	
	Bonito	75	6				d			
8	Big-eyed tuna	165	64	M	2		a			
	Yellowfin	140	40	M	2		a	イカ，ユーファシヤ 小魚	cuttle fish, Euphausia young fish	
	〃	140	37	M	2		d	ユーファシヤ，アジの小 小魚	Euphausia young fish	
	〃	140	40	M	2		d	小魚 ユーファシヤ	young fish Euphausia	

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content		Remarks
8	Yellowfin	140	41	M	2		a	ユーファシヤ	Euphausia	
	〃	125	24	M	1		d	ユーファシヤ	Euphausia	
	〃	125	30	M	2		d	イカ，ユーファシヤ小魚	cuttle fish, young fish, Euphausia	
	〃	110	19	F	1		a	ユーファシヤ イカ	Euphausia, cuttle fish	
	〃	90	13							
	〃	80	11							
	〃		4							
	〃	110	21	F	2		d	ユーファシヤ	Euphausia	
	〃	115	23	F	3		d	ユーファシヤ小魚	Euphausia, young fish	
	〃	130	38	M	1		a	空胃	empty	
	〃	125	23	F	2		d	イカ	cuttle fish	
	〃	105	13	F	2			イカ	cuttle fish	
	〃	110	21	M	2			イカ	cuttle fish	
	〃	100	13	F	3	320	d	イカ	cuttle fish	
	〃	120	24	F	3	450	a	イカ	cuttle fish	
	〃	125	28	F	2		d	イカ，小魚	cuttle fish, young fish	
	〃	120	25	M	1		a	イカ	cuttle fish	
	〃	110	24	M	1		a	イカ，アジ(小)小魚	cuttle fish, young fish	
	〃	115	25	F	1	420	a			
	〃	110	24	F	2		a			
	〃	110	24	F	3		a			

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content		Remarks
8	Yellowfin	110	24	M	1		a			
	〃	115	25	F	2		a	イカ，アジの小	cuttle fish	
	〃	115	22	F	4					
	〃	115	23	M	4					
	〃	115	24	F	4					
	〃	125	34	M	2					
	〃	110	24	F	4					
	〃	110	23	F	3		a			
	〃	115	22	F	4		d	イカ	cuttle fish	
	〃	115	23	F	4		d	イカ	cuttle fish	
	〃	140	45	M	1		a	ユーファシヤ	Euphausia	
	〃	90	13	M	1		a			
	〃	120	26	F	3		d	イカ(小)多数 アジ(小)	cuttle fish	
	〃	115	21	F	3		d	イカ，アジ(小)	cuttle fish	
	〃	130	35	M	1		d	イカ	cuttle fish	
	〃	130	35	F	3		d	ミズウオ ユーファシヤ	Euphausia	
	〃	120	25	F	2		d	イカ	cuttle fish	
	〃	105	19	M	1		d	イカ	cuttle fish	
	Sail fish	165	23	M	2		d	アジ(大，中)		
	〃	165	23	M	1		d	アジ(小)イカ	cuttle fish	
	〃	175	26	F	3	2700	d			

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content		Remarks
8	Mazara	220		F	1		a	空胃	empty	
9	Big-eyed tuna	70	6							
	〃	70								
	Yellowfin	125	26	F	3		d	イカ，小魚	cuttle fish, young fish	
	〃	125	30	F	3	500	a	イカ，ユーファシヤ	cuttle fish, Euphausia	
	〃	120	22	M	1	200	d	イカ，小魚	cuttle fish, young fish	
	〃	120	22	F	3	390	d	イカ，小魚	cuttle fish, young fish	
	〃	115	21	F	3	280	d	イカ，小魚	cuttle fish, young fish	
	〃	110	13	M	2	170	a	ユーファシヤ 小魚	Euphausia, young fish	
	〃	105	12	F	2	280	d	イカ，小魚	cuttle fish, young fish	
	〃	120	18	M	2	380	d	小魚，イカ タチウオの小	cuttle fish, young fish	
	〃	115	13	F	3	480	d	イカ(中，小) タチ，小魚	cuttle fish, young fish	
	〃	115	24	M	2	280	d	イカ，タチ	cuttle fish	
	〃	138	34	M	4	340	d	イカ(大)	cuttle fish	
	〃	135	34	M	1	270	d			
	〃	115	23	F	2	270	d			
	〃	125	28	M	2	310	d	イカ	cuttle fish	
	〃	115	24	F	2	320	d			
	〃	115	23	M	2		d			
	〃	105	21	M	2		d			

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content		Remarks
9	Yellowfin	110	22	F	3	320	a	空胃	empty	
	〃	125	28	F	2	340	d	イカ	cuttle fish	
	〃	140	30	F	2	620	d	イカ	cuttle fish	
	〃	50								
	〃	90	13	M	1		a	イカ，小魚	cuttle fish, young fish	
	〃	90	13	M	1		a	イカ，アジ(小) ユーファシヤ	cuttle fish, Euphausia	
	〃	80	10	M	1		a	イカ，アジ	cuttle fish	
	〃	70	7				a			
	〃	80	10	M	1		a			
	〃	90	13	M	1		a			
	〃	80	9	F	1		a			
	〃	145	41	M	4		d	アジ，サヨリ(小)		
	〃	80	8	M	1		a	イカ，小魚 ユーファシヤ	cuttle fish, young fish, Euphausia	
	Sail fish	170	19	M	1		d	イカ，小魚	cuttle fish, young fish	
10	Big-eyed tuna	95	16	M	1		a	イカ，ミズウオ，小魚	cuttle fish, young fish	精巣は小さい，未熟
	〃	100	23	M	1		a	小魚，ミズウオ	cuttle fish, young fish	〃
	Yellowfin	120		M	1		a	ハギ(中)タチ，シオムシ イカ，ユーファシヤ	cuttle fish, Euphausia	
	〃	135	47	M	1	320	d	イカ，小魚	cuttle fish, young fish	
	〃	135	47	F	4	570	d	イカ，小魚	cuttle fish, young fish	
	〃	140	48	M	4	390	d	イカ，タチ	cuttle fish	

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content		Remarks
10	Yellowfin	125	28	F	4	560	d	イカ，小魚	cuttle fish, young fish	
	〃	120	26	F	4	400	d	イカ，小魚	cuttle fish, young fish	
	〃	120	27	F	4	420	d			
11	Big-eyed tuna	95	13				d	イカ	cuttle fish	
	〃	95	13	F	1		a	イカ	cuttle fish	
	〃	95	13	F	1		d	イカ	cuttle fish	
	〃	140	50	M	1	240	a	イカ,小魚,ミズウオ	cuttle fish, young fish	
	〃	140	47	F	1	300	a	小魚，イカ	cuttle fish, young fish	
	Yellowfin	115	23	M	3	450	a	イカ(小)，小魚	cuttle fish, young fish	
	〃	135	38	M	2	430	d	イカ，小魚(3種)	cuttle fish, young fish	
	〃	130	36	M	3	540	d	イカ，小魚	cuttle fish, young fish	
	〃	135	39	M	2		d	イカ，小魚	cuttle fish, young fish	
	〃	125	35	M	2	630	d	イカ，小魚	cuttle fish, young fish	
	〃	135	35	M	2		d	イカ，アジ(中)	cuttle fish	
	〃	115	24	F	2	420	d	イカ，タチ小(小魚)	cuttle fish, young fish	
	〃	115	22	F	2	490	d	イカ，小魚	cuttle fish, young fish	
	〃	115	24	F	2	410	d	イカ，ハギ，小魚	cuttle fish, young fish	
	〃	115	22	M	2		d	イカ，小魚	cuttle fish, young fish	
	〃	130	38	M	2	390	a	小魚	young fish	
	〃	135	39	M	2	440	a	イカ，アジ	cuttle fish	

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content		Remarks
11	Yellowfin	115	24	M	2	320		イカ	cuttle fish	
	〃	145	39	F	3	900	d	小魚	young fish	
	〃	130	39	M	1		d			
	Sail fish	175	28	F	1	90	d	イカ，アジ(中)	cuttle fish	
	Mazara	300		F	1	930	a	マグロ，アジ(大)，イカ	cuttle fish, yellowfin	
12	Big-eyed tuna	115	28	F	1	320	a	イカ	cuttle fish	
	〃	95	18	F	1		a	イカ，アジ(小)	cuttle fish	
	〃	95	18	M	1		d	イカ	cuttle fish	
	〃	90	13	F	1		a			
	〃	120	28	F	1					
	〃	120	33	F	3			イカ，小魚	cuttle fish, young fish	
	〃	95	19	M	未熟		a			
	Yellowfin	135	39	M	3	530	a	イカ，小魚 ユーファシヤ	cuttle fish, young fish, Euphausia	
	〃	135	39	F	3	530	d	イカ，小魚	cuttle fish, young fish	
	〃	105	19	M	1	190	d	イカ，サビ(小)，小魚	cuttle fish, young fish	
	〃	125	30	F	3	570	d	イカ，小魚	cuttle fish, young fish	
	〃	110	23	F	2	450	a	イカ，小魚	cuttle fish, young fish	
	〃	130	41	M	3	590	d	イカ	cuttle fish	
	〃	130	38	M	2	550	d	イカ	cuttle fish	
	〃	130	38	M	2	470	d	イカ	cuttle fish	

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content		Remarks
12	Yellowfin	115	23	F	4	380	d	イカ, 小魚	cuttle fish, young fish	
	〃	125	32	M	2	450	d	イカ	cuttle fish	
	〃	135	42	M	4	620	d	イカ	cuttle fish	
	〃	140	41	M	2	490	d	イカ, サビ(小)	cuttle fish, young fish	
	〃	135	38	M	2	530	d	イカ, ハギ(小)	cuttle fish, young fish	
	〃	135	38	M	2	430	d	イカ	cuttle fish	
	〃	140	42	M	2	570	d			
	〃	140	41	M	4	670	d			
	〃	135	45	M	2	470	a	イカ	cuttle fish	
	〃	135	40	M	4	350	d	イカ, アジ(小)	cuttle fish, young fish	
	〃	135	41	M	2	570	a	空胃	empty	
	〃	125	26	M			d			
	〃	110	20	F	2	710	a			
	〃	130	33	M	2	240	d			
	〃	120	26	F	3	560				
	〃	130	32	F	3	650				
	〃	135	41	F	3	780				
	〃	130	33	M	2	390				
	〃	125	38	F	2	470				
	〃	140	47	M	4	490				
	〃	115	26	M	1					

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content		Remarks
12	Yellowfin	145	47	M	2	490	d			
	〃	130	32	M	2		d			
	〃	140	45	F	3		d			
	〃	130	33	M	4	490				
	〃	130	40	M	4					
	〃	135	41	M						
	〃	85	11							
	〃	130	33	F	3	630	d	イカ，アジ，小魚	cuttle fish, young fish	
	〃	140	45	M	2		d			
	Sail fish	170	26	F	1	320	d	イカ，アジ	cuttle fish	
	Sword fish	150	49	F	1		a	イカ	cuttle fish	殆んど未熟
13	Big-eyed tuna	120	28	M	1			イカ，サビ	cuttle fish	
	〃	145	49	M						
	〃	120	32	F	1		a			
	〃	120	28	F	1		a			
	〃	100	17							
	〃	125	33	M	1					
	〃		32							
	〃	125	32	M	1					
	〃	135	49	F	2					

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content		Remarks
13	Big-eyed tuna	135	49	M	2					
	〃	130	41	F	2					
	Yellowfin	115	26	F	3	470	d	イカ, 小魚	cuttle fish, young fish	
	〃	130								
	〃	135	42	M	2	320	d	イカ, 小魚	cuttle fish, young fish	
	〃	130		M	2		d			
	〃	130	42	M	2	370	d	イカ	cuttle fish	
	〃	115	26	M	4	330	d	イカ	cuttle fish	
	〃	80	8							
	〃	115	24	F	2	300	d			
	〃	90	12	M	1		d			
	〃	120	30	M	2		d			
	〃	115	23	F	2	290	d			
	〃	120	23	M	2		d			
	〃	125	28	M	2	400	d			
	〃	115	23	F	2	360				
	〃	115	26	F						
	〃	140	45	M	2	370		イカ	cuttle fish	
	〃	140	43	M	4			イカ	cuttle fish	
	〃	140	42	M	2	320	a	イカ	cuttle fish	
	〃	115	21	F	3	430		イカ	cuttle fish	

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content	Remarks
13	Yellowfin	120		F	3				
	〃	115	21	F	2				
	〃	115	24	F	2				
	〃	115	24	M	2				
	〃	125	32	M	4	420			
	〃	130	32	M	2				
	〃	125	30	M		480			
	〃	115	24	F	4				
	〃	140	45	M	2	520			
	〃	120	38	M	2		a		
	〃	135	38	M	2		d		
	〃	115	23	M	4				
	〃	130	42	M	2				
	〃	115	23	M	4				
	〃	135	40	M	2				
	〃	105	21	F	3				
	〃	135	41	M	2				
	〃	120	24	F	2				
	〃	115	23	M	4			イカ，サビ　　cuttle fish	
	〃	115	23	F	2				
	〃	135	40	M	2				

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content		Remarks
13	Sail fish	170	23	F	2	370	d	アジ		
	〃	160	24	M	1					
	Marlin	165	38	F	1					
	Sword fish	(冷凍)								
14	Big-eyed tuna	120	32	F	1	280	a	イカ，小魚	cuttle fish, young fish	
	〃	70	11							
	〃	135	38	M	2		a	ユーファシヤ(多数)	Euphausia (abundant)	
	〃	120	26	M	4	240	d			
	〃	120	24	M	2	580	d	イカ	cuttle fish	
	〃	135	34	F	3	610	d	イカ，小魚 ユーファシヤ	cuttle fish, young fish, Euphausia	
	〃	115	21	M	2	200	d			
	〃	95	18	F	1		a	イカ	cuttle fish	
	〃	95	19	M	1		d			
	〃	95	19	M	2		a			
	〃	135	41	M	2					
	〃	95	18	F	1					
	〃	95	18	F	1					
	〃	95	16	M	1					
	〃	125	41	F	1		a			
	〃	135	47	M	1		d			

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content		Remarks
14	Big-eyed tuna	120	38	M						
	〃	120	30	F						
	〃	110	27	F						
	〃	140	50	F						
	〃	125	43	M						
	〃	115	32	F						
	〃	115	30	F						
	〃	120	34	F	4					内臓共の重量
	Yellowfin	120	28	M	2	450	a	イカ，ユーファシヤ小魚	cuttle fish, Euphausia, young fish	
	〃	130	38	M	2	510	d			
	〃	115	24	F	2	330	d	イカ，小魚	cuttle fish, young fish	
	〃	135	40	M	2	720	d			
	〃	120	26	F	2	510	d	イカ，小魚，サビ	cuttle fish, young fish	
	〃	120	26	M	2	410	d			
	〃	120	24	M	2	530				
	〃	120	23	F	2	270	d			
	〃	130	30	M	2	420				
	〃	120	26	F	2	260	a	小魚	young fish	
	〃	125	28	F	2		d			
	〃	145	49	M	4	610		イカ，サビ，小魚	cuttle fish, young fish	
	〃	120	24	F	2	450				

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content	Remarks
14	Yellowfin	140	43	M	1				内臓共の重量
	〃	130	38	F	4				〃
	Spanish mackerel	128	(冷凍)						
15	Big-eyed tuna	125	43	F	1				重量は総て丸まのもの
	〃	130	51	F	3				
	〃	110		M	1				
	〃	145		M	3				
	〃	145		M	2				
	Yellowfin	115		M	2				
	〃	95	18	F	2				内臓を取つたときの重量 15
	〃	85	15	M	1				〃 〃 13
	〃	135	40	M	2				
	〃	115	22	F	2				
	〃	115		M	2				
	〃	120		M	3				
	〃	115		F	3				
	〃	130		M	2				
	〃	120		M	4				
	〃	130	36	M	2				内臓—2.8
	〃	140		M	2				

Table 5. (Continued)

No. of fishing	Species	Fork length (cm)	Body weight (kg)	Sex	Maturity	Weight of gonad (g)	Alive or dead	Stomach content	Remarks
15	Yellowfin	130		F	3				
	〃	110		F	3				
	〃	120		F	2				
	〃	125		M	2				
	〃	130		M	2				
	〃	130		F	2				

Ⅲ

THE "OSHORO MARU" CRUISE 42 TO THE BERING SEA IN MAY-JULY 1958 (IGY PROGRAMME)

おしよろ丸　第42次航海
ベーリング海観測　昭和32年5月～7月
（国際地球観測年共同調査）

1. Cruise Report
(航海報告)

Departure from Hakodate	May 26	函館出港
First hydrographic cast	May 28	海洋観測開始
Passed Amchitka Pass	June 8	アムチトカ海峡通過
First gill-net set	June 9	流網試験開始
Passed Atka Pass	June 18	アトカ海峡通過
Last gill-net set	June 25	流網試験終了
Last hydrographic cast	June 29	海洋観測終了
Arrival at Hakodate	July 9	函館帰港
Covered 6,889.3 miles in total 45 days at sea	(総航程6,889.3浬, 航海日数45日)	

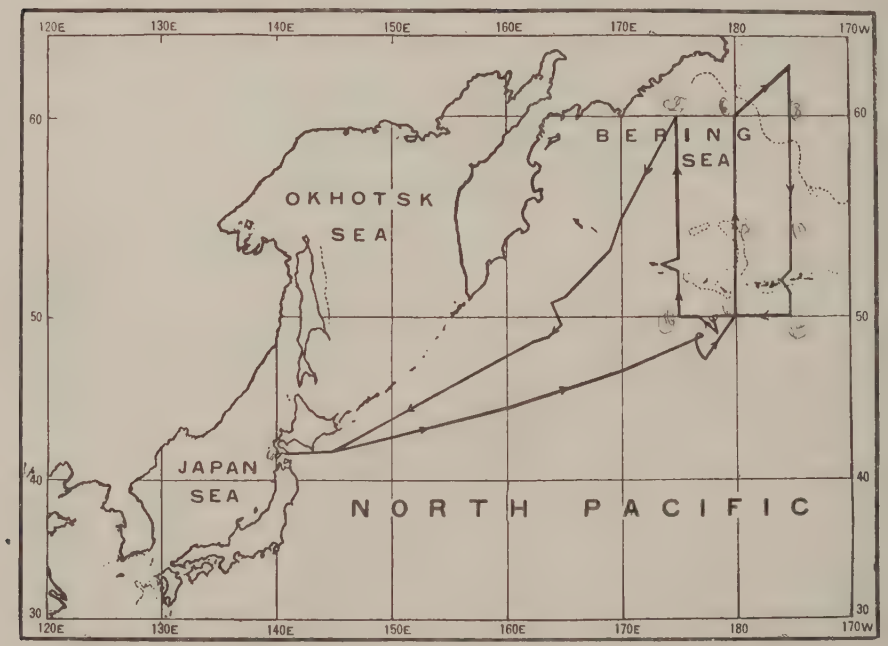

Fig. 1 Track of the cruise 42 of the "Oshoro Maru" to the Bering sea

2. Members of Staff Aboard
(乗船者)

Captain	Seikichi Mishima	船長 三島清吉
Crew		
Chief Officer	Shoji Saito	一等航海士 斎藤昭二

Oshoro Maru cruise 42 to the Bering Sea

Second Officer	Noriyoshi Masuda	二等航海士	増田紀義
Third Officer	Sigekatsu Nakane	三等航海士	中根重勝
Chief Engineer	Shoichi Tomisawa	機関長	富沢正一
First Engineer	Kenzo Omi	一等機関士	尾見健三
Secod Engineer	Ichiro Kataoka	二等機関士	片岡一郎
Third Engineer	Tetsusaburo Inomata	三等機関士	猪股鉄三郎
Chief Wireless Operator	Toshio Kasao	首席通信士	笠尾俊雄
Junior Wireless Operator	Mitsuo Kurotori	次席通信士	黒鳥満雄
Purser	Akira Togashi	事務長	富樫章
Doctor	Ryozo Takehana	船医	竹花良三
and 22 men		外 22 名	
Research Men			
Professor (Leader)	Naoichi Inoue (Physics)	教授(団長)	井上直一 (物理)
Research Assistant	Miki Oguro (Chemistry)	助手	小黒美樹 (化学)
Graduate Student	Kazuo Fujiuo (Physics)	大学院学生	藤野和夫 (物理)
	Tadayoshi Oki (Biology)		沖忠良 (生物)
	Atsushi Kosaka (Biology)		小坂淳 (生物)
Cadets			
37 cadets of Advanced Course of Pelagic Fishery		遠洋漁業特設専攻科学生 37名	
Total 75 persons		総員 75 名	

3. Research Committee
（調査委員）

Professor (Coordinator)	Naoichi Inoue (Physical oceanography, radio-activity, turbidity) （代表 教授 井上直一 海洋 放射能 濁度）
Professor	Shin-ichi Sato (Ichthyology) （教授 佐藤信一 魚類）
Professor	Tsuneyuki Saito (Chemistry) （教授 斎藤恒行 化学）
Assistant Professor	Teruyoshi Kawamura (Plankton) （助教授 川村輝良 プランクトン）
Assistant Professor	Tatsuro Kubo (Salmon) （助教授 久保達郎 鮭鱒）
Assistant Professor (Captain)	Seikichi Mishima (Fisheries, meteorology) （助教授 船長 三島清吉 漁業 気象）
Lecturer	Ken-ichiro Kyushin (Salmon) （講師 久新健一郎 鮭鱒）

4. Specification of Hydrographic stations
(海洋観測地点)

Table 1. Hydrographic stations in 1958 cruise 42 to the Bering Sea

No. of station	Ship's time		Greenwich mean time		Position		Maximum depth of cast(m)
	Date	Hour	Date	Hour	Latitude	Longitude	
Os 1 (Os 25-IGY)	Jun. 7	19.00-21.50	Jun. 7	08.00	50-00.0 N	180-00.0 W	1157
Os 2 (Os 26-IGY)	〃 8	15.50-17.10	〃 8	04.30	52-00.0 N	179-28.0 W	1396
Os 3 (Os 27-IGY)	〃 9	15.55-18.20	〃 9	05.00	54-20.0 N	180-00.0 W	1428
Os 4 (Os 28-IGY)	〃 10	17.35-19.21	〃 10	06.30	56-00.0 N	180-00.0 W	1135
Os 5 (Os 29-IGY)	〃 11	21.10-23.20	〃 11	10.00	58-00.0 N	180-00.0 W	463
Os 6 (Os 30-IGY)	〃 12	17.00-19.20	〃 12	06.00	60-00.0 N	180-00.0 W	1536
Os 7 (Os 31-IGY)	〃 13	21.20-22.20	〃 13	10.00	62-00.0 N	175-00.0 W	70
Os 8 (Os 32-IGY)	〃 14	12.30-13.20	〃 14	01.00	60-00.0 N	175-00.0 W	100
Os 9 (Os 33-IGY)	〃 15	03.55-05.20	〃 14	16.30	58-00.0 N	175-00.0 W	473
Os 10 (Os 34-IGY)	〃 15	20.05-21.35	〃 15	09.00	56-00.0 N	175-00.0 W	492
Os 11 (Os 35-IGY)	〃 16	20.05-22.05	〃 16	09.00	54-00.0 N	175-00.0 W	495
Os 12 (Os 36-IGY)	〃 17	14.40-16.05	〃 17	03.30	52-42.0 N	175-37.0 W	489
Os 13 (Os 37-IGY)	〃 18	13.50-15.30	〃 18	02.30	51-30.0 N	175-00.0 W	1445
Os 14 (Os 38-IGY)	〃 19	03.30-04.50	〃 18	16.00	50-00.0 N	175-00.0 W	1434
Os 15 (Os 39-IGY)	〃 20	04.20-05.50	〃 19	18.00	50-00.0 N	180-00.0 E	333
Os 16 (Os 40-IGY)	〃 22	19.15-21.10	〃 22	09.30	50-00.0 N	175-00.0 E	737
Os 17 (Os 41-IGY)	〃 23	13.00-14.30	〃 23	03.00	52-00.0 N	175-00.0 E	371
Os 18 (Os 42-IGY)	〃 23	22.00-23.30	〃 23	12.00	53-00.0 N	175-00.0 E	1442
Os 19 (Os 43-IGY)	〃 25	11.50-13.30	〃 25	01.30	54-00.0 N	175-00.0 E	1420
Os 20 (Os 44-IGY)	〃 26	15.20-17.10	〃 26	05.00	56-05.0 N	175-00.0 E	1458
Os 21 (Os 45-IGY)	〃 27	05.40-07.10	〃 26	19.30	58-00.0 N	175-00.0 E	1456
Os 22 (Os 46-IGY)	〃 27	20.05-22.20	〃 27	10.00	60-00.0 N	175-00.0 E	1431

5. Items of Observations and Procedure at Sea
(調査項目及び海上作業)

Meteorological observations (気象観測)

Every three-hour-interval, covering the whole course

Measurement of surface temperature (表面水温観測)

Every hour-interval, covering the whole course

Hydrographic cast (海洋観測)

At 22 stations. covering depths from the surface to usually 1500m. Cast to 0.10, 20, 30, 50, 75, 100, 150, 200, 300, 400, 500, 600, 800, 1000, 1200 and 1500m, in length of wire paid out. In deep cast each Nansen bottle carried out two protected thermometers and an unprotected thermometer. At 22 stations and also each two stations between two successive stations of them, temperature and current measurement were carried with BT and GEK.

Analyses of water samples (試水分析)

Chlorinity and desolved oxygen were measured on almost all depth and stations.

Radio-activity of sea water (海水放射能)

At 6 stations every 5 liters of sea water was dipped from the surface and just above and down layers of thermocline. (Data were not presented)

Plankton sampling (プランクトン採集)

Duplicate vertical hauls with NORPAC standard net (45cm × 180cm) from approximately 150m depth at each hydrographic station.

Horizontal tows with 130 × 450cm stramin conical net at the surface for ten minutes at low speed at each hydrographic stations.

Vertical hauls with a fine mesh net, 300 × 150cm, conicaly made of bolting silk XX 13, were carried out, from above 100m depth the surface at each hydrographic station.

Fish larvae tow (稚魚ネット曳網)

With 130 × 450cm stramin conical net by making holizontal tow at the surface for ten minutes at about 2 knots at every hydrographic station as well as at about one hour past of sunset time.

Salmon gill-net operation (鮭鱒流網漁業試験)

Seven operations were carried out at different locations.

Measurement of biological characters on fish caught by salmon gill net fishing (漁獲標本の生物学的測定)

Measurement of light absorption of sea water in situ (現場海水の光吸収度測定)

At 6 stations the turbidity of the sea water down to the 80 meters layer was measured by the turbidity-meter suspended from the boat.

Measurement of total radioactivity of sea water (海水全放射能測定)

At stations Os 3, 7, 11, 17, 20, 22, 5 liters of sea water was dipped up each from the surface and just over and under the layer of thermocline, and brought to the laboratory. The sample were subjected to measurement by the Fe-Ba method. These data which were submitted as the IGY report, showed no radioactivity.

6. Publications issued up to the Preseut
(発表された報告，研究論文)

Koto, H. and T, Fujii, 1959. Structure of the waters in the Bering Sea and the Aleutian region. Bull. Fac. Fish. Hokkaido Univ. 10 (1), 149–170.

7. Data on Meteorological Observations
(気象観測記録)

Observations were made under sponsorship of ship's officers at every three-hour-interval at sea.

Y' Y' : Date and time in Greenwich Mean Time (Universal Time)

Movement of wind direction (dd) and speed (ff) were measured by means of aerovane type anemometer set on the top of pole on bridge at the height of 10.5 meters above the sea surface.

Measurements of air temperature (TT) and dew point temperature (T_dT_d) were made by means of Asmann aspiration dry and wet bulb thermometer set on the upper deck at the height of 5 meters above the sea surface.

$T_tT_tT_t$: Temperature of surface water (00.0C).

X : Uncertain

Table 2. Data on meteorological observations in 1958 cruise 42 to the Bering Sea

Y'Y'		Y	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_rT_rT_r$
05	28	4	2	424	499	00	9	23	10	92	44	4	139	06	9	×	0	×	×	2	05	04	06	22	43
05	28	4	2	426	504	03	9	22	13	92	45	4	132	07	9	×	0	×	×	7	07	06	07	21	44
05	28	4	2	427	510	06	9	27	10	92	45	4	126	07	9	×	×	×	×	8	06	05	07	23	44
05	28	4	2	428	516	09	9	27	08	93	45	4	126	05	9	×	0	×	×	4	00	02	05	27	37
05	28	4	2	429	522	12	9	27	06	92	45	4	126	04	9	×	0	×	×	5	00	51	03	27	42
05	28	4	2	430	527	15	9	36	03	90	45	4	121	03	9	×	0	×	×	8	05	53	02	36	43
05	28	4	2	431	533	18	9	29	03	91	45	4	118	05	9	×	0	×	×	7	03	57	02	29	51
05	28	4	2	432	539	21	9	25	03	91	45	4	111	04	9	×	0	×	×	8	07	53	04	25	59
05	29	5	2	434	546	00	9	27	06	92	44	4	111	07	9	×	0	×	×	0	00	05	06	27	45
05	29	5	2	435	553	03	9	27	05	92	42	4	092	06	9	×	0	×	×	7	19	04	06	27	46
05	29	5	2	435	556	06	9	23	09	93	46	4	096	05	9	×	0	×	×	1	04	00	05	27	52
05	29	5	2	435	558	09	5	27	09	97	02	1	091	05	3	5	5	3	0	7	05	01	05	27	48
05	29	5	2	438	569	12	7	27	10	96	03	1	090	06	7	6	4	0	0	8	01	54	05	27	73
05	29	5	2	439	575	15	8	32	06	95	03	2	092	01	7	5	4	0	0	8	02	00	03	32	40
05	29	5	2	440	580	18	8	36	06	96	02	2	087	02	8	6	4	0	0	6	05	58	01	36	59
05	29	5	2	441	586	21	8	36	02	97	02	2	091	02	8	6	5	0	0	0	04	55	02	36	47
05	30	6	2	442	592	00	8	18	03	98	02	2	093	03	8	6	5	0	0	3	02	54	02	18	48
05	30	6	2	444	596	03	8	18	03	97	02	2	080	03	8	6	5	0	0	5	13	54	03	18	52
05	30	6	2	445	602	06	8	00	00	97	02	2	079	01	8	6	5	0	0	5	01	51	02	00	42
05	30	6	2	446	608	09	8	36	02	97	02	2	068	04	8	6	5	0	0	4	11	00	03	36	38
05	30	6	2	448	614	12	8	01	03	97	02	2	064	03	8	6	4	0	0	8	04	53	02	01	46
05	30	6	2	449	619	15	8	02	06	97	02	2	061	03	8	6	4	0	0	8	03	53	02	04	48
05	30	6	2	450	624	18	8	36	05	96	02	2	053	03	8	6	4	0	0	7	08	52	02	36	39
05	30	6	2	451	627	21	8	34	07	96	02	2	054	04	8	6	4	0	0	0	01	00	02	34	38
05	31	7	2	453	633	00	8	34	15	97	02	2	066	05	8	6	4	0	0	1	12	01	05	34	44
05	31	7	2	454	638	03	8	32	11	97	02	2	067	05	8	6	4	0	0	0	01	51	03	32	52
05	31	7	2	456	645	06	8	34	12	97	02	2	071	04	8	6	5	0	0	2	04	51	03	34	45
05	31	7	2	457	650	09	8	34	11	97	02	2	079	05	8	6	5	0	0	2	08	01	04	34	39
05	31	7	2	459	656	12	8	31	08	96	02	2	091	04	8	6	5	0	0	1	12	00	03	31	37

Table 2. (Continued)

Y′Y′	Y	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_rT_rT_r$
05 31	7	2	459	661	15	8	31	08	95	02	2	093	03	8	6	4	0	0	2	02	00	03	31	30
05 31	7	2	461	667	18	7	31	11	97	01	2	107	04	7	6	5	0	0	2	14	02	03	31	30
05 31	7	2	463	673	21	5	31	10	97	01	2	121	05	5	5	5	0	0	2	14	03	04	31	31
06 01	1	2	465	679	00	7	34	10	97	03	2	128	05	8	4	5	×	×	2	07	04	04	33	33
06 01	1	2	464	685	03	8	34	10	97	03	2	135	04	8	6	4	×	×	3	07	02	03	33	32
06 01	1	2	466	690	06	8	29	14	97	02	2	139	04	8	6	4	0	0	0	04	01	03	29	32
06 01	1	2	468	696	09	8	29	12	97	02	2	151	03	8	6	5	0	0	2	12	50	03	29	34
06 01	1	2	470	702	12	8	29	12	97	02	2	158	04	8	6	5	0	0	3	07	50	03	29	38
06 01	1	2	471	707	15	8	29	10	97	02	2	154	03	8	6	5	0	0	5	04	52	03	29	40
06 01	1	2	473	713	18	8	27	16	97	02	2	154	04	8	6	5	0	0	4	00	51	02	27	40
06 01	1	2	475	719	21	7	27	14	97	01	2	154	04	7	6	5	0	0	4	00	00	03	27	42
06 02	2	2	477	725	00	8	27	8	98	02	2	151	05	8	6	5	×	1	6	03	01	04	27	44
06 02	2	2	477	731	03	8	21	12	97	03	2	132	04	8	6	4			7	19	51	04	22	44
06 02	2	2	479	737	06	8	18	17	97	03	2	113	04	8	6	5	0	0	7	19	51	03	18	39
06 02	2	2	481	743	09	8	18	12	96	51	2	083	03	8	6	4			7	30	53	03	18	40
06 02	2	2	473	748	12	8	13	18	96	69	6	026	02	8	6	×	×	×	7	57	55	02	13	41
06 02	2	2	485	754	15	8	11	21	96	73	7	960	02	8	7	×	×	×	7	66	55	02	11	42
06 02	2	2	487	761	18	8	09	28	95	61	7	884	03	8	7	4	0	0	7	76	52	03	08	41
06 02	2	2	488	765	21	8	09	20	95	61	6	851	05	8	7	4	0	0	6	33	00	03	08	44
06 03	3	2	489	770	00	8	08	21	95	61	6	820	05	8	0	5	2	×	7	31	02	05	08	38
06 03	3	2	492	770	03	8	07	23	94	63	6	791	05	8	7	4	×	×	6	29	01	05	09	43
06 03	3	2	494	769	06	8	05	30	95	61	6	795	05	8	7	4	0	0	2	04	00	05	05	46
06 03	3	2	494	766	09	8	05	33	95	61	6	828	04	8	7	4	0	0	2	33	51	03	05	46
06 03	3	2	493	764	12	8	02	31	96	61	6	851	04	8	7	4	2	×	2	23	50	04	53	44
06 03	3	2	492	763	15	8	36	31	95	62	6	877	04	8	7	4	2	×	2	26	00	04	53	43
06 03	3	2	490	762	18	8	36	31	95	02	2	932	05	8	7	5	0	0	2	55	01	03	36	42
06 03	3	2	489	762	21	8	36	27	95	01	2	958	05	8	7	5	0	0	2	26	01	04	36	41
06 04	4	2	486	759	00	8	34	25	96	25	2	973	05	8	6	5	2	0	2	15	01	04	84	42
06 04	4	2	485	758	03	8	33	26	96	02	2	994	05	6	6	4	2	0	2	21	01	04	84	43

Table 2. (Continued)

Y'Y''	Y	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_rT_rT_r$
06 04	4	2	483	758	06	7	34	26	96	02	2	010	05	7	7	4	0	0	2	06	00	04	34	44
06 04	4	2	482	757	09	5	31	26	96	03	2	035	05	5	6	4	0	0	2	25	01	03	34	42
06 04	4	2	480	757	12	8	34	24	96	02	1	046	05	7	5	4	0	0	2	11	01	03	34	42
06 04	4	2	479	758	15	4	31	16	97	01	2	052	04	2	4	4	2	0	1	06	50	03		43
06 04	4	2	476	757	18	5	33	22	97	03	1	067	05	3	6	5	2	0	2	15	01	03	33	42
06 04	4	2	475	758	21	7	33	22	57	03	1	078	05	5	6	5	6	0	2	11	01	03	33	45
06 05	5	2	473	760	00	8	32	20	98	02	2	080	05	8	5	5	0	0	1	02	02	04	32	43
06 05	5	2	473	761	03	8	32	20	96	58	2	034	05	8	6	4	0	0	3	04	00	04	32	44
06 05	5	2	472	762	06	8	32	23	96	03	2	078	04	8	6	4	0	0	7	05	01	04	32	43
06 05	5	2	470	763	09	8	32	20	97	02	2	093	05	8	7	4	0	0	2	15	01	04	32	44
06 05	5	2	468	763	12	8	32	20	96	50	2	106	04	8	7	4	0	0	2	13	51	03	32	47
06 05	5	2	467	764	15	8	32	20	96	21	5	104	04	8	6	4	0	0	8	02	51	03	32	46
06 05	5	2	465	765	18	8	32	20	97	02	2	118	05	8	6	4	0	0	2	14	00	03	32	47
06 05	5	2	464	766	21	8	32	20	97	02	2	126	05	8	6	4	0	0	1	03	00	04	32	46
06 06	6	2	468	767	00	8	32	16	97	02	2	139	07	3	1	3	2	0	0	13	04	06	32	48
06 06	6	2	471	771	03	8	31	16	97	02	2	121	06	8	4	4	×	×	7	18	02	04	31	44
06 06	6	2	476	774	06	8	31	16	96	02	2	119	05	8	0	5	2	0	5	02	01	05	31	44
06 06	6	2	479	776	09	8	31	14	96	02	2	119	05	8	6	5	0	0	4	00	00	05	31	46
06 06	6	2	483	779	12	8	31	15	96	02	2	111	05	8	6	×	0	0	7	03	00	04	31	48
06 06	6	2	485	782	15	8	33	15	96	02	2	108	04	8	6	×	0	0	6	03	51		33	47
06 06	6	2	489	785	18	8	31	15	96	02	2	111	05	8	6	5	0	0	2	03	01	05	31	43
06 06	6	2	491	788	21	8	31	15	96	02	2	117	06	8	6	5	0	0	2	03	02	05	31	46
06 07	7	2	494	791	00	7	31	12	96	01	2	119	08	7	6	5	0	0	2	02	03	06	31	46
06 07	7	2	497	795	03	8	31	12	97	02	2	114	08	8	5	5	0	0	8	05	06	06	36	52
06 07	7	2	499	799	06	8	34	12	96	02	2	115	07	8	6	4	0	0	0	01	04	06	34	56
06 07	7	1	500	800	09	8	36	14	96	02	2	119	05	8	5	4	0	0	2	04	00	05	36	52
06 07	7	2	502	800	12	8	36	14	96	02	2	126	05	8	5	4	0	0	2	07	00	05	36	52
06 07	7	2	506	800	15	8	01	14	97	02	2	132	05	8	5	4	0	0	1	06	51	04	36	55
06 07	7	2	509	800	18	8	36	19	97	02	2	148	05	8	6	4	0	0	2	16	51	05	36	53

Table 2. (Continued)

Y′Y′		Y	Q	$L_AL_AL_A$	$L_OL_OL_O$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_ST_S	T_dT_d	d_Wd_W	$T_iT_tT_t$
06	07	7	2	512	800	21	6	36	17	97	01	2	159	05	6	5	4	1	0	3	11	52	05	36	57
06	08	1	1	510	798	00	8	36	17	97	02	2	160	05	8	4	6	0	0	3	01	51	04	36	52
06	08	1	1	150	931	03	7	36	10	97	02	2	160	05	6	4	6	0	0	5	00	00	05	36	52
06	08	1	1	520	794	06	8	34	10	97	02	2	153	05	8	6	6	0	0	7	07	00	05	34	53
06	08	1	1	523	795	09	8	34	14	96	02	2	157	04	3	7	4	2	0	3	01	52	04	34	54
06	08	1	1	526	799	12	8	34	16	96	02	2	150	04	8	6	×	×	×	8	07	51	04	34	50
06	08	1	1	529	799	15	8	34	19	96	50	2	137	03	8	6	4	×	×	7	13	53	03	34	47
06	08	1	1	533	799	18	8	32	16	95	50	2	121	04	6	6	5	2	0	7	16	51	04	32	47
06	08	1	1	536	180	21	8	31	17	95	02	2	099	05	4	7	3	2	0	7	22	51	04	32	51
06	09	2	1	539	180	00	8	31	17	95	02	2	075	05	8	0	5	2	0	8	24	00	04	32	46
06	09	2	1	543	800	03	8	31	15	95	02	2	059	04	8	6	3	0	0	7	16	51	03	32	46
06	09	2	1	543	800	06	8	33	15	95	02	2	043	04	4	6	4	2	0	7	16	51	03	32	45
06	09	2	1	543	800	09	8	33	17	95	02	5	046	04	8	6	4	0	0	4	03	50	04	33	43
06	09	2	1	543	800	12	8	34	09	95	58	2	035	04	8	6	×	0	0	7	11	00	04	34	44
06	09	2	1	543	800	15	8	02	08	96	02	2	031	04	8	0	4	2	0	5	04	00	04	02	43
06	09	2	2	545	800	18	7	02	10	98	01	2	057	04	8	6	5	0	0	2	26	51	03	02	43
06	09	2	2	549	800	21	8	01	08	98	03	2	081	04	8	5	5	0	0	2	24	51	04	01	46
06	10	3	2	553	800	00	8	02	08	98	02	2	081	05	8	5	5	0	0	4	00	01	04	03	44
06	10	3	2	577	800	03	8	36	10	98	02	2	080	04	8	4	5	0	0	1	09	50	04	36	43
06	10	3	2	560	800	06	8	34	08	98	02	2	084	04	8	5	5	0	0	8	06	51	03	34	45
06	10	3	2	560	800	09	8	04	04	98	02	2	088	04	8	4	5	0	0	0	04	51	03	04	42
06	10	3	2	560	800	21	8	03	04	98	02	2	081	04	8	4	5	0	0	7	07	00	03	04	41
06	10	3	2	560	800	15	8	34	03	96	02	2	078	04	8	6	5	0	0	7	03	50	04	34	44
06	10	3	2	561	799	18	8	36	12	96	02	2	071	04	8	6	5	0	0	7	07	51	04	36	43
06	10	3	2	566	800	21	8	36	14	96	02	2	075	04	8	6	4	0	0	3	04	51	04	36	45
06	11	4	2	564	800	00	7	01	17	97	01	2	071	05	7	5	5	0	0	7	04	01	05	01	45
06	11	4	1	573	800	03	8	03	18	97	03	2	079	04	8	6	4	0	0	2	08	50	04	03	46
06	11	4	2	576	800	06	8	02	16	96	02	2	087	04	8	0	4	2	0	2	08	00	04	02	43
06	11	4	2	580	800	09	8	03	18	96	02	2	096	03	8	6	5	0	0	2	09	52	03	03	45

Table 2. (Continued)

Y′Y′	Y	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_fT_fT_f$
05	11	4	2	581	799	12	8	04	16	96	02	2	079	04	8	6	4	0	0	7	17	01	03	04	42
06	11	4	2	585	799	15	8	04	15	96	02	2	001	03	8	6	5	0	0	0	01	52	03	04	45
06	11	4	2	588	799	18	8	36	17	97	02	2	079	03	8	6	5	0	0	7	01	53	03	36	47
05	11	4	2	592	800	21	7	02	17	96	01	2	073	03	7	6	5	0	0	4	06	54	02	02	46
05	12	5	2	595	800	00	8	02	21	96	03	2	066	03	8	6	5	0	0	8	07	53	03	02	45
05	12	5	2	599	800	03	8	02	24	96	02	2	060	04	8	6	3	0	0	8	06	51	03	02	42
06	12	5	2	600	800	09	8	02	22	96	02	2	064	04	8	6	5	0	0	0	04	52	03	02	44
03	12	5	1	601	798	09	7	36	20	98	01	2	057	04	6	7	5	1	0	7	07	52	04	36	46
06	12	5	1	602	793	12	4	36	20	98	01	1	051	04	2	4	7	1	0	7	06	51	04	36	45
05	12	5	1	605	788	15	6	36	14	97	01	1	047	04	4	4	5	5	0	7	04	51	03	36	44
06	12	5	1	607	783	18	7	36	10	97	01	2	050	04	5	6	5	2	0	2	03	00	03	36	34
06	12	5	1	609	777	21	7	36	08	97	02	2	053	04	3	5	5	2	0	2	03	01	04	36	37
06	13	6	1	612	771	00	7	35	06	97	02	2	050	05	5	5	5	2	0	6	03	03	05	35	41
06	13	6	1	615	764	03	6	31	08	97	01	2	038	07	2	5	5	3	0	7	12	05	05	31	38
06	13	6	1	617	758	06	7	31	05	98	03	1	032	04	6	5	6	3	0	6	06	01	04	31	36
06	13	6	1	620	750	09	9	04	03	93	47	2	032	03	9	×	0	×	×	4	00	50	03	07	30
06	13	6	1	618	750	12	9	04	03	93	44	2	027	03	9	×	0	×	×	6	05	02	03	04	24
06	13	6	1	613	750	15	8	03	02	96	02	4	027	03	8	6	3	0	0	4	00	51	03	04	36
06	13	6	1	609	750	18	8	00	00	91	46	2	033	03	8	0	5	2	0	1	06	52	03	00	39
06	13	6	1	605	750	21	9	27	01	92	43	4	046	03	9	×	0	×	×	2	13	53	03	27	41
06	14	7	1	600	751	00	8	25	05	96	02	4	053	04	8	6	2	0	0	2	07	52	03	25	46
06	14	7	1	598	750	03	8	25	03	96	02	2	054	04	8	6	3	0	0	4	01	50	04	25	45
06	14	7	1	593	750	06	8	27	02	96	02	2	064	04	8	7	4	2	0	2	10	52	04	27	55
06	14	7	1	589	749	09	8	25	05	95	02	2	079	06	8	6	3	0	0	2	15	00	05	25	55
06	14	7	1	586	750	12	8	27	05	96	61	2	086	05	4	7	3	2	0	2	07	52	04	27	56
06	14	7	1	581	750	15	8	27	07	95	02	6	093	05	8	6	3	0	0	2	07	50	04	29	48
06	14	7	1	579	749	18	8	27	08	95	02	2	104	04	8	6	4	0	0	2	11	51	04	27	50
06	14	7	1	574	750	21	8	25	07	97	02	2	113	04	8	6	4	0	0	2	09	51	03	25	48
06	15	1	1	570	750	00	8	25	09	97	02	2	128	04	8	6	4	0	0	2	15	53	03	25	53

Table 2. (Continued)

Y'Y'	Y	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_rT_rT_r$
05	15	1	1	566	750	03	7	25	08	96	41	2	133	04	7	6	3	0	0	0	05	52	03	25	54
05	15	1	1	562	750	06	6	25	08	96	01	2	143	05	6	6	5	2	0	2	10	52	04	23	58
05	15	1	1	560	750	09	8	23	08	96	03	2	144	05	8	6	4	0	0	0	01	52	04	23	58
06	15	1	1	560	750	12	8	21	01	96	20	2	141	05	8	6	4	0	0	8	03	53	04	21	62
06	15	1	1	560	750	15	8	21	06	96	20	5	140	05	8	6	3	0	0	5	01	52	05	21	58
06	15	1	1	559	749	09	8	22	03	97	02	2	139	05	8	6	5	0	0	4	01	52	03	22	58
06	15	1	1	555	750	18	8	22	03	97	21	2	146	05	8	6	4	0	0	2	07	50	04	22	52
06	16	2	1	551	750	00	6	18	03	96	01	2	144	06	2	2	4	1	0	8	02	00	04	18	56
06	16	2	1	547	750	03	7	18	03	97	01	1	148	07	4	8	4	6	0	1	04	01		18	65
06	16	2	1	542	750	06	7	18	03	97	02	2	151	06	7	6	5	0	0	2	03	51	04	18	68
06	16	2	1	540	750	09	8	18	05	97	03	2	148	06	8	6	5	0	0	7	03	52	05	18	67
06	16	2	1	540	750	12	8	14	08	95	02	2	151	07	8	6	5	0	0	3	03	01	05	14	68
06	16	2	1	540	750	15	8	18	07	95	02	2	151	06	2	2	4	2	0	5	00	50	04	13	65
06	16	2	1	539	740	18	8	13	07	97	20	2	155	06	2	5	5	2	0	3	04	51	06	13	67
06	16	2	1	535	751	21	8	13	08	96	20	2	170	06	4	7	4	2	0	2	15	51	06	13	65
06	17	3	1	531	753	00	8	12	08	97	01	2	180	07	4	5	4	1	0	2	10	50	05	12	67
06	17	3	1	527	754	03	8	14	06	97	02	2	176	07	7	6	5	2	0	7	04	01	06	14	62
06	17	3	1	527	755	06	7	09	03	98	01	2	184	07	5	5	5	1	0	2	08	50	06	09	68
06	17	3	1	527	756	09	7	13	03	97	60	2	195	06	7	6	4	2	0	2	11	51	04	13	68
06	17	3	1	527	754	12	8	09	02	97	02	6	195	07	8	6	4	0	0	0	00	01	05	09	63
06	17	3	1	527	756	15	8	07	02	97	02	2	194	06	8	4	4	0	0	4	01	51	04	07	66
06	17	3	1	525	757	18	8	00	00	97	02	2	198	07	8	5	4	0	0	2	04	50	06	00	68
06	17	3	1	521	754	21	7	07	03	97	01	2	197	09	7	5	5	0	0	8	01	06	06	07	57
06	18	4	1	517	752	00	7	07	05	97	02	2	187	09	7	5	5	0	0	7	10	04	07	07	72
06	18	4	1	515	750	03	8	07	10	98	03	2	176	08	3	4	5	6	0	6	11	50	06	07	77
06	18	4	1	513	750	06	8	07	08	97	02	2	164	08	8	5	5	0	0	7	12	02	06	07	73
06	18	4	1	507	751	09	6	05	12	97	01	2	158	07	3	5	5	5	1	7	06	01	05	05	67
06	18	4	1	505	751	12	1	05	08	96	01	1	137	06	1	5	6	0	0	7	21	50	05	05	63
06	18	4	1	500	750	15	8	05	08	97	03	1	115	06	7	1	4	5	0	7	22	51	05	05	64

Table 2. (Continued)

Y'Y'	Y	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_rT_rT_r$
06	18	4	1	500	752	18	7	01	14	97	01	2	094	06	3	4	5	6	0	6	21	51	06	02	64
06	18	4	1	500	759	21	6	36	19	97	01	2	099	06	2	4	5	6	0	2	05	00	05	36	60
06	19	5	1	500	766	00	8	36	18	97	03	2	091	07	6	5	5	2	0	7	08	00	05	36	63
06	19	5	1	500	773	03	7	34	19	97	01	2	081	06	7	1	4	3	0	7	10	52	05	34	68
06	19	5	1	500	778	06	8	36	19	96	02	2	069	06	8	6	4	0	0	7	12	00	05	36	62
06	19	5	1	500	786	09	8	01	20	96	03	2	081	06	6	7	5	2		3	12	51	06	01	64
06	19	5	1	500	790	12	3	01	22	96	01	2	079	06	3	0	×	2	0	5	02	51	06	01	63
06	19	5	1	500	796	15	8	35	28	96	03	2	080	05	6	7	6	2	0	1	01	52	05	35	63
06	19	5	2	501	800	18	7	36	30	96	01	2	090	05	7	7	4	0	0	2	10	52	04	36	60
06	19	5	2	501	796	21	7	34	33	96	02	2	091	06	7	7	4	0	0	3	01	51	03	34	61
06	20	6	2	502	792	00	8	33	30	96	02	2	101	06	7	6	3	3	0	2	10	51	04	83	63
06	20	6	2	499	792	03	8	34	26	96	02	2	093	06	7	7	3	2	0	8	08	00	04	34	58
06	20	6	2	499	792	06	8	32	30	94	02	2	091	06	8	7	4	0	0	7	02	00	05	36	57
06	20	6	2	497	792	09	8	34	32	95	02	2	101	06	8	7	4	0	0	3	10	00	04	34	58
06	20	6	2	495	792	12	8	34	27	95	02	2	106	06	8	×	×	×	×	1	05	50	05	34	58
06	20	6	2	493	792	15	8	34	28	95	02	2	115	06	8	7	4	0	0	2	09	00	04	34	55
06	20	6	2	491	792	18	8	34	27	95	02	2	130	06	8	7	4	0	0	2	15	50	05	34	57
06	20	6	2	490	793	21	8	34	27	95	02	2	136	05	8	7	4	0	0	2	06	51	05	34	57
06	21	7	2	488	793	00	8	33	20	96	02	2	147	06	8	6	4	0	0	2	11	50	05	33	57
06	21	7	2	488	794	03	8	32	17	96	02	2	147	06	8	6	3	0	0	4	00	00	04	32	57
06	21	7	2	490	790	06	8	32	21	96	02	2	153	06	8	6	4	0	0	2	06	01	05	32	51
06	21	7	2	493	786	09	8	31	18	96	02	2	160	05	8	6	4	0	0	3	07	51	05	31	58
06	21	7	2	495	783	12	8	30	16	96	02	2	157	05	8	×	×	×	×	6	03	51	05	31	58
06	21	7	2	497	779	15	8	30	16	96	02	2	157	05	8	×	×	×	×	4	00	50	04	31	56
06	21	7	2	499	777	18	8	31	15	96	02	2	159	05	8	6	4	0	0	3	02	51	05	31	58
06	21	7	2	500	772	21	7	29	12	96	01	2	164	06	7	6	4	0	0	3	05	51	05	29	62
06	22	1	2	500	764	00	7	30	16	97	01	2	173	06	7	6	4	0	0	2	09	50	05	30	59
06	22	1	2	499	762	03	5	29	16	97	01	1	172	06	5	8	4	0	0	5	01	00	05	29	62
06	22	1	2	500	756	06	8	29	13	97	02	2	177	06	8	6	4	0	0	2	05	50	04	29	65

Table 2. (Continued)

Y'Y'	Y	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_1T_rT_r$
06	22	1	2	500	750	09	8	29	11	97	02	2	179	06	8	6	4	0	0	4	02	51	04	29	61
06	22	1	2	501	750	12	8	28	10	96	02	2	168	07	8	6	×	0	0	6	11	00	05	28	64
06	22	1	2	506	750	15	8	27	08	96	02	2	160	06	8	6	4	0	0	7	08	51	05	29	63
06	22	1	2	510	750	18	8	27	09	96	20	2	151	06	8	6	4	0	0	7	09	51	05	29	63
06	22	1	2	514	750	21	8	25	11	96	01	2	134	07	8	6	5	0	0	7	17	01	06	25	65
06	23	2	2	518	750	00	8	25	12	95	02	2	127	08	8	6	5	0	0	7	07	04	06	25	63
06	23	2	2	521	750	03	6	23	16	96	41	2	107	06	6	6	4	0	0	7	20	50	05	23	63
06	23	2	2	524	751	06	8	23	12	95	02	2	092	06	8	6	5	0	0	7	15	01	06	23	60
06	23	2	2	527	750	09	8	23	13	95	41	2	072	06	8	0	5	2	0	7	20	01	05	23	59
06	23	2	2	530	750	12	8	20	16	95	21	2	047	06	8		×			7	25	50	06	20	60
06	23	2	2	530	743	15	8	20	21	95	20	5	016	06	8	6	4	0	0	7	31	00	05	20	60
06	23	2	2	531	739	18	4	22	21	96	01	2	995	06	2	6	5	5	0	7	21	00	05	22	58
06	23	2	2	530	734	21	2	21	18	96	02	0	991	07	1	4	5	0	3	8	04	01	06	21	64
06	24	3	2	530	734	00	6	20	16	97	03	1	973	07	1	4	5	1	8	7	18	01	05	20	68
06	24	3	2	530	734	03	7	20	19	97	02	1	964	07	7	7	3	2	0	7	09	00	06	20	65
06	24	3	2	531	734	06	8	18	05	96	03	2	963	07	6	6	5	2	0	7	01	01	06	18	63
06	24	3	2	533	737	09	6	35	05	96	01	2	968	07	6	4	3	1	0	3	05	00	06	35	65
06	24	3	2	533	737	12	8	33	06	95	03	2	977	07	2	5	4	2	0	2	09	01	06	33	63
06	24	3	2	533	737	15	8	32	07	95	02	2	999	06	8	8	4	0	0	1	22	01	06	32	60
06	24	3	2	534	739	18	8	34	05	96	02	2	012	06	8	6	5	0	0	2	13	50	06	33	65
06	24	3	2	537	744	21	8	32	04	96	02	2	026	07	8	6	6	0	0	2	14	01	06	33	64
06	25	4	2	540	750	00	8	33	08	96	02	2	051	07	2	4	4	2	0	2	25	01	03	32	64
06	25	4	2	540	751	03	6	31	09	96	01	2	054	08	4	1	4	3	0	2	03	03	05	31	66
06	25	4	2	545	751	06	8	27	06	97	02	2	074	05	8	6	5	0	0	2	20	52	05	27	65
06	25	4	2	536	750	09	8	30	07	97	02	2	079	06	8	4	5	0	0	2	05	50	03	30	62
06	25	4	2	536	750	12	8	28	02	96	02	2	091	06	8	6	4	0	0	2	12	51	03	27	62
06	25	4	2	546	750	15	8	27	04	96	02	2	104	05	8	6	3	0	0	2	13	53	03	27	61
06	25	4	2	546	750	18	8	27	04	97	02	2	106	05	8	6	5	0	0	1	02	52	05	27	61
06	25	4	2	551	750	21	8	23	03	97	02	2	110	06	8	5	5	0	0	2	04	00	06	23	62

Table 2. (Continued)

Y′Y′	Ÿ	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	dwdw	$T_tT_tT_t$
06	26	5	2	555	751	00	8	23	03	98	02	2	118	06	8	6	5	2	0	2	08	00	06	22	63
06	26	5	2	559	750	03	8	21	02	98	02	2	115	07	7	8	4	2	0	6	03	50	05	21	67
06	26	5	2	561	750	06	8	18	06	96	02	2	108	06	8	5	5	0	0	8	07	50	04	18	66
06	26	5	2	565	750	09	8	18	06	96	02	2	115	06	8	5	5	0	0	3	07	50	04	18	66
06	26	5	2	570	751	12	8	14	05	94	02	2	113	06	8	5	5	1	0	7	02	51	06	14	68
06	26	5	2	574	750	12	8	15	07	96	02	2	117	06	8	5	5	0	0	2	04	51	04	15	67
06	26	5	2	579	750	18	8	13	07	96	02	2	118	06	8	6	5	0	0	5	01	50	05	13	66
06	26	5	2	582	750	21	8	11	10	96	02	2	117	07	8	6	4	0	0	4	01	00	06	11	67
06	27	6	2	585	749	00	8	11	12	97	03	2	128	07	5	7	3	2	0	2	11	51	06	11	75
06	27	6	2	591	753	03	8	09	09	97	02	2	124	07	8	6	4	0	0	4	04	01	05	09	64
06	27	6	2	595	750	06	8	09	16	97	03	2	124	07	8	4	4	0	0	4	00	52	06	08	76
06	27	6	2	600	750	09	8	08	13	97	03	2	124	07	8	5	4	0	0	4	00	52	06	08	78
06	27	6	2	601	749	12	8	09	16	97	02	2	117	06	8	6	5	0	0	8	07	53	06	09	77
06	27	6	2	597	741	15	7	07	16	97	41	2	093	07	7	4	4	3	0	7	24	50	06	09	75
06	27	6	2	593	741	18	8	07	18	96	51	2	071	07	8	0	5	2	0	7	22	51	06	07	76
06	27	6	2	589	738	21	8	09	18	95	51	5	056	07	8	0	5	2	0	7	15	01	06	09	66
06	28	7	2	586	733	00	8	08	23	95	63	5	040	07	8	0	5	2	0	7	16	01	07	08	62
06	28	7	2	582	729	03	8	05	24	95	61	6	028	07	8	0	5	2	0	7	12	01	06	08	62
06	28	7	2	579	724	06	8	07	17	95	51	5	013	06	8	0	2	2	0	7	15	00	06	07	61
06	28	7	2	576	719	09	8	07	21	95	63	5	011	06	4	7	2	2	0	7	02	01	06	07	59
06	28	7	2	572	715	12	8	05	20	95	63	6	012	07	8	0	5	2	0	1	01	02	06	06	58
06	28	7	2	568	710	15	8	05	20	95	51	6	013	06	8	7	3	0	0	0	01	00	06	05	58
06	28	7	2	564	706	18	8	03	19	95	02	5	031	06	8	0	4	2	0	2	18	00	06	03	61
06	28	7	2	560	703	21	8	03	19	95	02	2	047	07	8	6	4	0	0	2	16	00	06	03	64
06	29	1	2	555	702	00	8	02	16	95	02	4	067	07	8	6	4	0	0	2	20	00	07	02	66
06	29	1	2	550	701	03	8	34	20	96	02	2	082	07	8	6	3	0	0	2	15	01	06	36	65
06	29	1	2	546	700	06	8	32	20	96	02	2	096	06	8	6	4	0	0	2	14	00	05	32	64
06	29	1	2	542	698	09	8	32	20	96	02	2	118	06	8	6	4	0	0	2	22	51	05	32	63
06	29	1	2	538	697	12	8	31	16	96	02	2	133	06	8	6	4	0	0	1	15	52	06	32	68

Table 2. (Continued)

Y′Y′		Y	Q	LaLaLa	LoLoLo	GG	N	dd	ff	VV	ww	W	PPP	TT	Nh	CL	h	CM	CH	a	PP	TsTs	TdTd	dwdw	TtTtTt
06	29	1	2	533	694	15	8	32	13	96	02	2	144	05	8	6	4	0	0	3	11	52	04	23	65
06	29	1	2	530	689	18	8	34	09	96	02	2	164	05	8	6	5	0	0	2	20	52	04	34	60
06	29	1	2	528	687	21	8	34	06	96	02	2	186	06	8	6	5	0	0	2	22	51	05	34	63
06	30	2	2	525	682	00	8	33	02	97	02	2	195	06	8	6	4	×	×	2	09	51	05	33	60
06	30	2	2	521	672	03	8	18	02	97	02	2	194	06	8	6	4	0	0	6	01	52	05	18	69
06	30	2	2	519	670	06	8	20	05	95	41	2	206	06	8	0	5	2	0	2	12	53	05	20	72
06	30	2	2	517	667	09	9	18	08	90	45	2	201	05	9	×	0	×	×	7	05	53	05	18	65
06	30	2	2	517	667	12	9	16	07	90	45	2	199	05	9	×	0	×	×	8	02	53	05	16	69
06	30	2	2	517	667	15	8	16	12	93	42	2	191	05	8	0	5	2	0	7	08	52	05	16	66
06	30	2	2	516	667	18	8	16	16	93	42	2	164	06	8	6	2	0	0	7	27	51	05	16	63
06	30	2	2	514	661	21	8	13	18	94	44	4	147	06	8	0	4	2	0	8	17	50	06	13	66
07	01	3	2	511	656	00	8	12	22	96	28	4	104	07	8	0	4	2	0	7	43	01	06	12	65
07	01	3	2	509	650	03	8	09	28	93	61	4	030	07	8	7	2	0	0	7	74	01	07	09	63
07	01	3	2	509	641	06	8	11	28	93	64	6	983	08	8	7	2	0	0	7	47	02	07	11	64
07	01	3	2	509	641	09	8	11	29	93	60	6	968	07	8	7	2	0	0	7	15	03	07	13	59
07	01	3	2	509	641	12	8	16	25	95	02	2	972	07	8	0	4	2	×	2	04	03	06	16	60
07	01	3	2	508	642	15	9	18	20	95	02	2	964	06	9	×	0	×	×	8	08	01	06	18	60
07	01	3	2	506	643	18	8	18	20	94	51	2	961	06	8	7	2	0	0	7	03	00	06	18	61
07	01	3	2	506	643	21	8	19	24	93	44	2	964	06	8	7	3	0	0	3	03	01	06	16	56
07	02	4	2	502	646	00	8	20	24	94	44	2	977	07	8	0	4	2	×	2	13	01	06	19	61
07	02	4	2	498	646	03	8	22	24	94	61	2	991	06	8	7	2	×	×	2	14	51	06	22	66
07	02	4	2	498	653	06	8	27	27	94	21	4	020	06	8	7	2	×	×	2	19	01	06	27	60
07	02	4	2	497	651	09	8	27	30	93	44	4	073	06	8	7	2	0	0	2	53	01	05	27	57
07	02	4	2	496	648	12	7	27	27	97	01	2	124	07	6	5	5	7	×	2	51	01	06	27	61
07	02	4	2	495	646	15	9	27	28	92	47	1	163	05	9	×	0	×	×	2	29	51	05	27	61
07	02	4	2	493	640	18	9	26	22	91	45	4	181	05	9	×	0	×	×	2	18	52	05	26	59
07	02	4	2	490	636	21	0	25	15	97	02	4	198	06	0	0	9	0	0	1	03	50	05	25	63
07	03	5	2	488	630	00	1	25	12	97	01	4	213	07	1	0	8	1	0	2	15	00	05	25	66
07	03	5	2	486	625	03	5	26	15	98	03	1	224	08	2	6	3	1	4	2	11	02	07	26	67

Table 2. (Continued)

Y'Y'	Y	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_tT_tT_t$
07 03	5	2	484	620	06	5	26	16	98	03	1	239	08	1	6	3	1	5	2	15	02	06	26	66
07 03	5	2	482	616	09	5	27	10	97	02	1	252	08	1	4	4	1	4	2	13	03	08	27	67
07 03	5	2	482	616	12	9	27	10	93	47	0	264	05	9	×	0	×	×	2	12	52	05	27	62
07 03	5	2	482	616	15	9	24	13	93	45	4	261	05	9	×	×	×	×	6	03	53	05	23	64
07 03	5	2	482	616	18	9	27	13	93	45	4	252	05	9	×	×	×	×	6	04	54	04	27	66
07 03	5	2	481	611	21	8	23	10	93	44	4	252	05	8	0	5	2	0	0	00	54	04	23	64
07 04	6	2	478	605	00	8	23	09	96	02	4	252	06	8	6	5	×	×	0	00	50	06	23	65
07 04	6	2	475	598	03	8	17	09	95	41	2	240	07	8	6	3	0	0	8	12	02	07	17	64
07 04	6	2	473	593	06	9	17	07	92	45	2	223	07	9	×	0	×	×	7	17	01	07	17	66
07 04	6	2	471	587	09	9	16	10	93	45	4	212	07	9	×	0	×	×	7	11	02	07	15	63
07 04	6	2	469	581	12	9	17	09	93	45	4	206	08	9	×	0	×	×	7	06	03	07	17	62
07 04	6	2	466	576	15	2	18	07	93	42	4	176	07	×	×	6	8	1	7	30	00	06	18	66
07 04	6	2	464	560	18	6	16	09	93	44	4	161	07	4	4	3	3	×	7	15	02	07	17	60
07 04	6	2	462	564	21	6	16	10	93	42	4	153	08	8	6	4	0	0	7	08	03	08	16	61
07 05	7	2	459	558	00	9	14	10	93	45	4	134	09	9	×	0	×	×	6	19	05	09	15	64
07 05	7	2	457	552	03	9	16	14	92	45	4	120	09	9	×	×	×	×	7	14	05	09	16	64
07 05	7	2	455	546	06	9	16	14	91	47	4	106	09	9	×	×	×	×	7	14	06	09	16	65
07 05	7	2	452	541	09	9	15	08	91	45	4	110	09	9	×	0	×	×	6	04	04	09	15	64
07 05	7	2	450	538	12	9	18	04	91	45	4	111	06	9	×	0	×	×	1	01	05	11	18	65
07 05	7	2	442	533	15	9	00	00	91	45	4	101	08	9	×	0	×	×	7	10	03	08	00	68
07 05	7	2	444	528	18	9	01	06	93	45	4	107	08	9	×	0	×	×	1	06	50	08	36	83
07 05	7	2	441	523	21	9	02	06	93	45	4	110	09	9	×	0	×	×	2	03	01	09	02	89
07 06	1	2	438	519	00	5	04	06	93	40	4	111	11	5	0	7	1	0	3	01	04	10	04	87
07 06	1	2	435	514	03	9	04	06	93	43	4	115	11	9	×	0	×	×	1	04	02	11	04	101
07 06	1	2	432	509	06	8	05	09	94	28	4	106	12	8	6	3	0	0	6	09	03	12	05	108
07 06	1	2	429	504	09	8	02	09	96	28	4	107	11	8	6	5	0	0	2	01	00	11	02	111
07 06	1	2	426	499	12	8	03	09	96	02	2	106	12	8	0	×	2	0	5	01	51	12	03	124

8. Data on Temperature, and Computed Data on Dynamic Depth

(温度塩分記録及びダイナミックデプス計算値)

Double titration for chlorinity determination, calculation of depth, interpolation of data, and computation of dynamic depth were made by S, Nishizawa.

Code of the World Meteorological Organization

dd: Wind direction

ff: Wind speed

ww: Present weather

TTT: Air temperature

Abbreviations

Tr: Transparency of water in meters as represented by Secchi's disc reading

C: Colour of sea

X: No observation

Table 3. Data on temperature, salinity and dynamic depth in 1958 cruise 42 to the Bering Sea

Station Os 1 (Os 25-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0700-0950	7	6	1958	50°00′N	180°00′W	34	14	02	074	N3	N2	8	15

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		5.4	18.15	32.79	0	5.4	18.15	32.79	25.90	211	
10	16	4.83	18.16	32.81	10	4.83	18.16	32.81	25.98	204	.0208
21	〃	5.07	18.16	32.81	20	5.07	18.16	32.81	25.95	207	.0414
31	〃	5.10	18.14	32.77	30	5.10	18.15	32.79	25.93	209	.0622
52	〃	5.20	18.14	32.77	50	5.20	18.14	32.77	25.91	211	.1044
71	23	4.25	18.36	33.17	75	3.52	18.40	33.24	26.46	158	.1508
94	〃	4.13	18.55	33.51	100	4.08	18.57	33.55	26.56	149	.1894
115	〃	3.91	18.65	33.69	125	3.92	18.68	33.75	26.81	125	.2239
138	〃	3.95	18.71	33.80	150	3.91	18.74	33.86	26.90	117	.2543
177	25	3.79	18.77	33.91	200	3.85	18.79	33.95	26.98	109	.3111
217	〃	3.91	18.80	33.96	250	3.83	18.83	34.02	27.04	103	.3651
258	〃	3.81	18.84	34.04	300	3.68	18.86	34.07	27.10	98	.4169
338	〃	3.66	18.88	34.11	400	3.59	18.89	34.13	27.15	93	.5149
434	39	3.59	18.90	34.14	500	3.44	18.93	34.20	27.23	85	.6064
506	〃	3.42	18.93	34.20	600	3.21	18.97	34.27	27.31	78	.6914
651	〃	3.12	18.99	34.31	800	2.81	19.02	34.36	27.42	67	.8454
796	〃	2.82	19.02	34.36	1000	2.50	19.06	34.43	27.50	60	.9824
941	〃	2.60	19.05	34.42							
1157	〃	2.25	19.08	34.47							

Table 3. (Continued)

Station Os 2 (Os 26-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0350–0510	8	6	1958	52°00′N	178°28′W	36	10	02	054	N 3	NNE 1	6	17

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\Delta_{st}$	ΔD
0		5.3	18.25	32.97	0	5.3	18.25	32.97	26.05	197	
10	5	5.18	18.24	32.95	10	5.18	18.24	32.95	26.05	197	.0197
20	〃	5.04	18.25	32.97	20	5.04	18.25	32.97	26.08	194	.0393
29	〃	4.88	18.27	33.01	30	4.87	18.27	33.01	26.13	190	.0585
48	〃	4.68	18.34	33.13	50	4.67	18.34	33.13	26.25	178	.0770
74	10	4.57	18.36	33.17	75	4.57	18.36	33.17	26.29	174	.1213
99	〃	4.45	18.38	33.21	100	4.45	18.38	33.21	26.33	171	.1642
123	〃	4.31	18.42	33.28	125	4.30	18.43	33.30	26.42	162	.2067
148	〃	4.25	18.49	33.40	150	4.24	18.50	33.42	26.53	152	.2463
184	20	4.21	18.58	33.57	200	4.17	18.62	33.64	26.70	135	.3186
226	〃	4.04	18.66	33.71	250	3.90	18.69	33.77	26.83	123	.3836
272	〃	3.79	18.71	33.80	300	3.73	18.75	33.87	26.94	113	.4434
359	〃	3.62	18.83	34.02	400	3.58	18.85	34.05	27.10	98	.5509
496	43	3.51	18.86	34.07	500	3.50	18.86	34.07	27.12	96	.6504
574	〃	3.38	18.90	34.14	600	3.34	18.92	34.18	27.22	86	.7449
730	〃	3.14	18.97	34.27	800	3.06	18.98	34.29	27.33	76	.9159
905	〃	2.96	19.00	34.33	1000	2.86	19.01	34.34	27.40	69	1.0719
1101	〃	2.75	19.02	34.36	1200	2.63	19.04	34.40	27.48	62	1.2149
1396	〃	2.34	19.08	34.47							

Station Os 3 (Os 27-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0355–0620	9	6	1958	54°20′N	180°00′W	33	15	02	042	NNW 4	NW 2	4	13

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\Delta_{st}$	ΔD
0		4.4	18.41	33.26	0	4.4	18.41	33.26	26.38	166	
10	11	4.10	18.39	33.22	10	4.10	18.39	33.22	26.38	166	.0166
19	〃	4.11	18.38	33.21	20	4.11	18.38	33.21	26.37	167	.0333
28	〃	4.04	18.40	33.24	30	4.01	18.40	33.24	26.41	163	.0498
47	〃	3.48	18.41	33.26	50	3.43	18.41	33.26	26.48	156	.0817
73	24	3.10	18.40	33.24	75	3.09	18.40	33.24	26.50	154	.1207
96	〃	3.00	18.40	33.24	100	2.97	18.40	33.24	26.51	154	.1595
118	〃	2.84	18.43	33.30	125	2.88	18.45	33.33	26.59	146	.1973
135	〃	3.37	18.50	33.42	150	3.72	18.56	33.53	26.66	139	.2331
214	35	3.81	18.69	33.77	200	3.83	18.67	33.73	26.81	125	.2994
258	〃	3.75			250	3.76	18.75	33.87	26.94	113	.3597
302	〃	3.71	18.81	33.98	300	3.71	18.81	33.98	27.02	105	.4152
404	〃	3.61	18.86	34.07	400	3.62	18.86	34.07	27.11	97	.5182
546	47	3.46	18.90	34.14	500	3.51	18.88	34.11	27.14	94	.6162
627	〃	3.32	18.91	34.16	600	3.37	18.91	34.16	27.20	88	.7107
789	〃	3.12	18.97	34.27	800	3.11	18.97	34.27	27.32	77	.8847
968	〃	2.93	19.02	34.36	1000	2.88	19.03	34.38	27.43	66	1.0387
1146	〃	2.70	19.03	34.38	1200	2.63	19.04	34.40	27.46	63	1.1797
1428	〃	2.42	19.08	34.47							

Table 3. (Continued)

Station Os 4 (Os 28-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0535-0721	10	6	1958	56°00′N	180°00′W	34	08	02	038	NNW 2	NNE 1	8	17

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		4.5	18.37	33.19	0	4.5	18.37	33.19	26.32	172	
10	0	4.01	18.37	33.19	10	4.01	18.37	33.19	26.37	167	.0170
20	〃	3.76	18.35	33.15	20	3.76	18.35	33.15	26.36	168	.0338
30	〃	3.70	18.35	33.15	30	3.70	18.35	33.15	26.36	168	.0506
51	〃	2.68	18.34	33.13	50	2.72	18.34	33.13	26.44	160	.0834
67	3	2.38	18.34	33.13	75	2.36	18.34	33.13	26.47	157	.1232
89	〃	2.34	18.35	33.15	100	2.27	18.35	33.15	26.45	159	.1630
112	〃	2.19	18.36	33.17	125	2.37	18.38	33.21	26.53	152	.2020
134	〃	2.70	18.40	33.24	150	2.74	18.41	33.26	26.54	151	.2400
194	5	2.76	18.43	33.30	200	2.80	18.44	33.31	26.58	147	.3145
244	〃	3.22	18.59	33.58	250	3.29	18.60	33.60	26.75	131	.3843
296	〃	3.75	18.65	33.69	300	3.75	18.66	33.71	26.80	126	.4493
398	〃	3.73	18.78	33.93	400	3.73	18.78	33.93	26.98	109	.5693
469	15	3.63	18.82	34.00	500	3.60	18.84	34.04	27.08	99	.6763
563	〃	3.54	18.86	34.07	600	3.50	18.88	34.11	27.14	94	.7763
750	〃	3.29	18.96	34.26	800	3.23	18.97	34.27	27.30	79	.9583
951	〃	3.02	18.99	34.31	1000	2.95	19.00	34.33	27.38	71	1.1193
1030	〃	2.85	19.01	34.34							
1135	〃	2.71	19.03	34.38							

Station Os 5 (Os 29-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0910-1120	11	6	1958	58°00′N	180°00′W	03	18	02	034	NNE 5	NE 3	8	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		4.5	18.36	33.17	0	4.5	18.36	33.17	26.30	173	
9	12	4.11	18.33	33.12	10	4.11	18.33	33.12	26.30	173	.0173
18	〃	4.11	18.33	33.12	20	4.11	18.33	33.12	26.30	173	.0346
26	〃	3.98	18.32	33.10	30	3.87	18.34	33.13	26.33	171	.0518
44	〃	3.23	18.35	33.15	50	3.04	18.35	33.15	26.43	161	.0850
73	20	2.61	18.35	33.15	75	2.61	18.35	33.15	26.46	158	.1250
95	〃	2.51	18.36	33.17	100	2.49	18.36	33.17	26.50	154	.1643
119	〃	2.45	18.40	33.24	125	2.46	18.40	33.24	26.55	150	
143	〃	2.53	18.39	33.22							
201	35	3.87	18.57	33.55							
463	50	3.36	18.89	34.12							

Table 3. (Continued)

Station Os 6 (Os 30-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0500-0720	12	6	1958	60°00′N	180°00′W	02	22	02	036	NNE 6	NNE 3	8	12

Observed					Interpolated				Computed		
Depht (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		4.2	18.32	33.10	0	4.2	18.32	33.10	26.27	176	
9	15	4.20	18.31	33.08	10	4.20	18.31	33.08	26.25	178	.0177
18	〃	3.93	18.31	33.08	20	3.79	18.31	33.08	26.30	173	.0353
27	〃	2.91	18.32	33.10	30	2.89	18.32	33.10	26.40	164	.0522
44	〃	2.71	18.32	33.10	50	2.69	18.32	33.10	26.42	162	.0848
74	28	2.23	18.32	33.10	75	2.23	18.32	33.10	26.45	159	.1249
96	〃	2.24	18.32	33.10	100	2.23	18.32	33.10	26.45	159	.1648
117	〃	2.19	18.36	33.17	125	2.20	18.37	33.19	26.53	152	.2039
139	〃	2.25	18.38	33.21	150	2.32	18.39	33.22	26.55	150	.2418
232	54	2.99	18.51	33.44	200	2.66	18.46	33.35	26.62	143	.3151
272	〃	3.68	18.61	33.62	250	3.47	18.55	33.51	26.67	138	.3856
310	〃	3.75	18.67	33.73	300	3.75	18.67	33.73	26.82	124	.4519
398	〃	3.70	18.76	33.89	400	3.70	18.76	33.89	26.95	112	.5724
597	55	3.40	18.87	34.09	500	3.56	18.81	33.98	27.04	103	.6824
673	〃	3.30	18.92	34.18	600	3.40	18.87	34.09	27.14	94	.7839
826	〃	3.08	18.97	34.27	800	3.12	18.97	34.27	27.32	77	.9639
951	65	2.88	19.02	34.36	1000	2.83	19.03	34.38	27.43	66	1.1179
1235	〃	2.57	19.07	34.45	1200	2.61	19.07	34.45	27.50	60	1.2559
1536	〃	2.23	19.10	34.51	1500	2.27	19.10	34.51	27.57	53	1.4434

Station Os 7 (Os 31-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0920-1020	13	6	1958	62°00′N	175°00′W	04	03	47	029	NE 1	ENE 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		3.0	17.73	32.03	0	3.0	17.73	32.03	25.54	246	
10	0	1.16	17.74	32.05	10	1.16	17.74	32.05	25.69	231	.0239
20	〃	1.27	17.75	32.07	20	1.27	17.75	32.07	25.70	230	.0470
30	〃	1.77	17.87	32.29	30	−1.77	17.87	32.29	26.00	202	.0686
50	〃	1.63	17.95	32.43	50	−1.63	17.95	32.43	26.11	192	.1080
70	〃	1.70	17.95	32.43							

Table 3. (Continued)

Station Os 8 (Os 32-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0030-0120	14	6	1958	60°00′N	175°00′W	25	05	02	036	WSW 1	WSW 1	8	10

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		4.4	18.10	32.70	0	4.4	18.10	32.70	25.94	208	
10	0	3.76	18.11	32.72	10	3.76	18.11	32.72	26.02	200	.0204
20	〃	3.39	18.10	32.70	20	3.39	18.10	32.70	26.03	199	.0404
30	〃	3.38	18.11	32.72	30	3.38	18.11	32.72	26.05	197	.0602
50	〃	2.39	18.13	32.75	50	2.39	18.13	32.76	26.17	186	.0985
75	〃	1.99	18.13	32.75	75	1.99	18.13	22.76	26.20	183	.1446
100	〃	2.00	18.15	32.79	100	2.00	18.15	32.79	26.23	180	.1900

Station Os 9 (Os 33-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1555-1720	14	6	1958	58°00′N	175°00′W	27	07	02	044	W 3	W 1	8	12

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		5.1	18.22	32.92	0	5.1	18.22	32.92	26.04	198	
10	8	4.98	18.23	32.94	10	4.98	18.23	32.94	26.05	197	.0198
19	〃	4.82	18.23	32.94	20	4.82	18.23	32.94	26.08	194	.0394
29	〃	4.64	18.23	32.94	30	4.64	18.23	32.94	26.10	192	.0587
48	〃	3.42	18.31	33.08	50	3.40	18.32	33.10	26.35	169	.0948
73	13	3.18	18.34	33.13	75	3.17	18.34	33.13	26.40	164	.1366
97	〃	3.09	18.37	33.19	100	3.07	18.37	33.19	26.45	159	.1772
122	〃	2.80	18.39	33.22	125	2.78	18.39	33.22	26.52	153	.2165
205	25	3.38	18.48	33.39	150	2.63	18.41	33.36	26.55	150	.2545
253	〃	3.86	18.61	33.62	200	3.33	18.47	33.37	26.57	148	.3293
299	〃	3.88	18.65	33.69	250	3.86	18.61	33.62	26.72	134	.4006
397	〃	3.76	18.71	33.80	300	3.88	18.65	33.69	26.77	129	.4674
473	38	3.54	18.83	34.02	400	3.76	18.71	33.80	26.87	119	.5939

Table 3. (Continued)

Station Os 10 (Os 34-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0805-0935	15	6	1958	56°00′N	175°00′W	23	08	03	046	SW 2	×	8	9

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		5.8	18.22	32.92	0	5.8	18.22	32.92	25.95	207	
10	6	5.62	18.23	32.94	10	5.62	18.23	32.94	26.00	202	.0205
20	〃	5.22	18.26	32.99	20	5.22	18.26	32.99	26.07	195	.0404
31	〃	5.18	18.26	32.99	30	5.18	18.26	32.99	26.08	194	.0599
52	〃	4.96	18.26	32.99	50	5.00	18.26	32.99	26.10	192	.0986
70	16	4.19	18.29	33.04	75	4.06	18.30	33.06	26.26	177	.1450
93	〃	3.72	18.34	33.13	100	3.60	18.34	33.13	26.35	169	.1885
117	〃	3.33	18.35	33.15	125	3.26	18.36	33.17	26.43	161	.2300
139	〃	3.17	18.37	33.19							

Station Os 11 (Os 35-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0805-1005	16	6	1958	54°00′N	175°00′W	18	05	03	058	S 1	ESE 1	8	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		6.6	18.35	33.15	0	6.6	18.35	33.15	26.04	198	
9	4	5.32	18.34	33.13	10	5.32	18.34	33.13	26.18	185	.0192
17	〃	5.00	18.36	33.17	20	4.96	18.36	33.17	26.25	178	.0374
26	〃	4.89	18.34	33.13	30	4.81	18.34	33.13	26.23	180	.0553
43	3	4.38	18.35	33.15	50	4.05	18.36	33.17	26.35	169	.0903
76	〃	3.12	18.38	33.21	75	3.12	18.38	33.21	26.46	158	.1314
101	〃	2.96	18.39	33.22	100	2.96	18.39	33.22	26.50	154	.1707
127	〃	2.72	18.40	33.24	125	2.74	18.40	33.24	26.53	152	.2092
152	〃	2.57	18.43	33.30	150	2.57	18.43	33.30	26.58	147	.2467
197	9	3.67	18.57	33.55	200	3.70	18.58	33.57	26.70	135	.3175
247	〃	3.90	18.66	33.71	250	3.89	18.66	33.71	26.80	126	.3835
296	〃	3.83	18.70	33.78	300	3.82	18.71	33.80	26.86	120	.4460
395	〃	3.71	18.79	33.95	400	3.68	18.81	33.98	27.03	104	.5605
495	11	3.59	18.85	34.05							

Table 3. (Continued)

Station Os 12 (Os 36-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0240-0405	17	6	1958	52°42′N	175°37′W	14	06	02	068	SE 2	SE 1	7	7.5

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		6.2	18.27	33.01	0	6.2	18.27	33.01	25.98	204	
10	0	5.84	18.28	33.03	10	5.84	18.28	33.03	26.03	199	.0202
20	〃	5.28	18.29	33.04	20	5.28	18.29	33.04	26.12	191	.0397
30	〃	5.19	18.30	33.06	30	5.19	18.30	33.06	26.14	189	.0587
52	〃	4.26	18.30	33.06	50	4.32	18.30	33.06	26.23	180	.0957
68	〃	3.96	18.31	33.08	75	3.94	18.32	33.10	26.30	173	.1401
97	〃	3.90	18.33	33.12	100	3.90	18.34	33.13	26.33	171	.1834
148	7	3.50	18.40	33.24	125	3.70	18.37	33.19	26.40	164	.2255
198	〃	3.29	18.43	33.30	150	3.50	18.40	33.24	26.45	159	.2660
247	〃	3.31	18.43	33.30	200	3.29	18.43	33.30	26.53	152	.3440
294	〃	3.67	18.52	33.46	250	3.32	18.43	33.30	26.52	153	.4210
394	〃	3.80	18.70	33.78	300	2.70	18.53	33.48	26.63	142	.4958
489	〃	3.79	18.80	33.96	400	3.80	18.71	33.80	26.86	120	.6293

Station Os 13 (Os 37-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0150-0330	18	6	1958	51°30′N	175°00′W	07	10	03	076	ENE 3	ESE 1	6	5

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		7.2	18.16	32.81	0	7.2	18.16	32.81	25.68	232	
10	10	7.12	18.13	32.75	10	7.12	18.13	32.76	25.65	235	.0234
20	〃	5.97	18.13	32.75	20	5.97	18.13	32.76	25.81	220	.0462
29	〃	5.85	18.13	32.75	30	5.85	18.13	32.76	25.82	219	.0682
48	〃	4.74	18.29	33.04	50	4.73	18.30	33.06	26.19	184	.1086
72	14	4.63	18.33	33.12	75	4.62	18.34	33.13	26.25	178	.1541
96	〃	4.51	18.39	33.22	100	4.46	18.39	33.22	26.34	170	.1979
120	〃	4.33	18.41	33.26	125	4.33	18.41	33.26	26.39	165	.2402
144	〃	4.39	18.41	33.26	150	4.39	18.41	33.26	26.38	166	.2820
204	28	4.21	18.45	33.33	200	4.22	18.45	33.33	26.45	159	.3637
251	〃	4.10	18.55	33.51	250	4.10	18.54	33.50	26.60	145	.4405
297	〃	4.18	18.57	33.55	300	4.19	18.57	33.55	26.63	142	.5133
392	〃	4.43	18.73	33.84	400	4.42	18.74	33.86	26.84	122	.6478
516	42	3.86	18.86	34.07	500	3.92	18.35	34.05	27.05	102	.7633
596	〃	3.65	18.87	34.09	600	3.65	18.87	34.09	27.12	96	.8663
767	〃	3.46	18.97	34.27	800	3.40	18.78	34.29	27.30	79	1.0513
962	〃	3.03	19.02	34.36	1000	3.01	19.03	34.38	27.42	67	1.2093
1156	〃	2.83	19.06	34.43	1200	2.78	19.07	34.45	27.49	61	1.3493
1445	〃	2.54	19.11	34.52							

Table 3. (Continued)

Station Os 14 (Os 38-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1530-1650	18	6	1958	50°00′N	175°00′W	05	08	03	058	NE 3	NE 2	4	12.6

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		6.3	18.25	32.97	0	6.3	18.25	32.97	25.93	209	
10	12	6.24	18.20	32.88	10	6.25	18.20	32.88	25.86	215	.0212
20	〃	5.75	18.21	32.90	20	5.75	18.21	32.90	25.94	208	.0424
30	〃	5.56			30	5.56	18.23	32.94	26.00	202	.0629
49	〃	4.79	18.25	32.97	50	4.56	18.25	32.97	26.13	190	.1022
74	20	3.83	18.31	33.08	75	3.83	18.31	33.08	26.30	173	.1478
99	〃	3.17	18.36	33.17	100	3.17	18.36	33.17	26.43	161	.1898
123	〃	3.10	18.40	33.24	125	3.11	18.40	33.24	26.50	154	.2294
148	〃	3.46	18.59	33.58	150	3.46	18.60	33.60	26.75	131	.2652
206	30	3.31	18.72	33.82	200	3.32	18.72	33.82	26.93	114	.3267
251	〃	3.35	18.75	33.87	250	3.35	18.75	33.87	26.97	110	.3835
296	〃	3.35	18.79	33.95	300	3.35	18.80	33.96	27.04	103	.4378
388	〃	3.43	18.87	34.09	400	2.43	18.88	34.11	27.03	104	.5433
544	45	3.36	18.92	34.18	500	3.39	18.91	34.16	27.20	88	.6418
624	〃	3.22	18.96	34.26	600	3.27	18.95	34.24	27.26	82	.7303
789	〃	2.97	18.99	34.31	800	2.94	18.99	34.31	27.35	74	.8953
972	〃	2.70	19.03	34.38	1000	2.67	19.04	34.40	27.45	64	1.0443
1160	〃	2.50	19.07	34.45	1200	2.46	19.03	34.47	27.53	57	1.1763
1434	〃	2.26	19.11	34.52							

Station Os 15 (Os 39-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1720-1850	19	6	1958	50°00′N	180°00′E	36	30	01	050	N 7	NNW 4	7	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		6.0	18.18	32.84	0	6.0	18.18	32.85	25.87	214	
15	35	6.04	18.13	32.75	10	6.04	18.15	32.79	25.83	218	.0216
24	〃	6.00	18.14	32.77	20	6.03	18.14	32.77	25.82	219	.0435
31	〃	5.91	18.14	32.77	30	5.94	18.14	32.77	25.83	218	.0654
48	〃	5.25	18.14	32.77	50	5.15	18.14	32.77	25.92	210	.1083
69	38	3.82	18.29	33.04	75	3.56	18.31	33.08	26.32	172	.1563
87	〃	3.27	18.32	33.10	100	3.82	18.41	33.26	26.44	160	.1981
104	〃	4.03	18.46	33.35	125	4.18	18.66	33.71	26.75	131	.2349
121	〃	4.18	18.65	33.69	150	4.17	18.69	33.77	26.80	126	.2674
200	55	4.03	18.71	33.80	200	4.03	18.71	33.80	26.84	122	.3299
230	〃	3.97	18.82	34.00	250	3.91	18.85	34.05	27.05	102	.3869
260	〃	3.87	18.85	34.05	300	3.80	18.87	34.09	27.10	98	.4384
333	〃	3.76	18.88	34.11							

Table 3. (Continued)

Station Os 16 (Os 40-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0815-1010	22	6	1958	50°00′N	175°00′E	29	11	02	058	WNW 3	NW 2	8	16.1

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		6.1	18.21	32.90	0	6.1	18.21	32.90	25.91	211	
10	13	5.90	18.19	32.86	10	5.90	18.19	32.86	25.90	211	.0211
20	〃	5.86	18.21	32.90	20	5.86	18.21	32.90	25.93	209	.0421
30	〃	5.74	18.20	32.88	30	5.74	18.20	32.88	25.93	209	.0630
49	〃	4.92	18.23	32.94	50	4.91	18.23	32.94	26.06	196	.1036
76	14	3.88	18.25	32.97	75	3.88	18.25	32.97	26.21	182	.1511
101	〃	3.20	18.40	33.24	100	3.20	18.38	33.21	26.45	159	.1940
127	〃	3.70	18.62	33.64	125	3.68	18.61	33.62	26.74	132	.2306
152	〃	3.80	18.72	33.82	150	3.79	18.72	33.82	26.89	117	.2619
204	26	3.77	18.78	33.93	200	3.77	18.78	33.93	26.97	110	.3189
250	〃	3.68	18.82	34.00	250	3.68	18.82	34.00	27.04	103	.3732
297	〃	3.60	18.84	34.04	300	3.60	18.84	34.04	27.08	99	.4252
390	〃	3.55	18.89	34.12	400	3.54	18.89	34.13	27.15	93	.5237
519	29	3.40	18.94	34.22	500	3.43	18.93	34.20	27.23	85	.6152
613	〃	3.27	18.98	34.29	600	3.29	18.97	34.27	27.30	79	.7007
800	〃	2.89	19.03	34.38	800	2.89	19.03	34.38	27.43	66	.8547

Station Os 17 (Os 41-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0200-0330	23	6	1958	52°00′N	175°00′E	23	16	41	062	SW 4	W 2	6	9.6

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		6.3	18.32	33.10	0	6.3	18.32	33.10	26.03	199	
10	18	6.03	18.28	33.03	10	6.03	18.28	33.03	26.02	200	.0200
20	〃	5.77	18.29	33.04	20	5.77	18.29	33.05	26.05	197	.0399
30	〃	5.56	18.30	33.06	30	5.56	18.30	33.06	26.10	192	.0594
49	〃	5.27	18.30	33.06	50	5.27	18.30	33.06	26.13	190	.0977
77	22	4.29	18.32	33.10	75	4.45	18.32	33.10	26.24	179	.1441
101	〃	3.53	18.34	33.13	100	3.53	18.34	33.13	26.37	167	.1876
125	〃	3.61	18.40	33.24	125	3.61	18.40	33.24	26.45	159	.2286
149	〃	3.78	18.51	33.44	150	3.79	18.51	33.44	26.58	147	.2670
199	34	3.89	18.62	33.64	200	3.89	18.63	33.66	26.74	132	.3345
243	〃	3.90	18.70	33.78	250	3.90	18.72	33.82	26.87	119	.3980
286	〃	3.85	18.78	33.93	300	3.84	18.79	33.95	26.98	109	.4560
371	〃	3.81	18.83	34.02							

Table 3. (Continued)

Station Os 18 (Os 42-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1100-1230	23	6	1958	53°00′N	175°00′E	20	16	21	058	SSW 4	SSW 2	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		5.8	18.31	33.08	0	5.8	18.31	33.08	26.08	194	.0193
10	14	5.73	18.31	33.08	10	5.73	18.31	33.08	26.10	192	.0387
19	〃	5.74	18.30	33.06	20	5.74	18.30	33.06	26.07	195	.0580
28	〃	5.63	18.31	33.08	30	5.55	18.31	33.08	26.12	191	.0950
48	〃	4.21	18.30	33.05	50	4.14	18.30	33.06	26.25	178	.1931
80	24	3.68	18.32	33.10	75	3.71	18.31	33.08	26.31	173	.1815
105	〃	3.86	18.38	33.21	100	3.68	18.37	33.19	26.40	164	.2221
129	〃	3.80	18.42	33.28	125	3.82	18.42	33.28	26.45	159	.2612
154	〃	3.36	18.43	33.30	150	3.39	18.43	33.30	26.52	153	.3350
213	39	3.90	18.57	33.55	200	3.70	18.54	33.50	26.64	141	.4033
257	〃	4.06	18.67	33.73	250	4.07	18.66	33.71	26.77	129	.4668
300	〃	3.98	18.71	33.80	300	3.98	18.71	33.80	26.85	121	.5843
456	43	3.75	18.83	34.02	400	3.82	18.79	33.95	26.98	109	.6913
540	〃	3.66	18.86	34.07	500	3.70	18.85	34.05	27.08	99	.7908
624	〃	3.58	18.90	34.14	600	3.60	18.89	34.13	27.15	93	.9758
793	〃	3.35	18.94	34.22	800	3.34	18.94	34.22	27.25	83	1.1448
979	〃	3.08	18.97	34.27	1000	3.04	18.98	34.29	27.34	75	1.2978
1155	〃	2.82	19.02	34.36	1200	2.77	19.03	34.38	27.43	66	
1442	〃	2.47	19.06	34.43							

Station Os 19 (Os 43-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0050-0230	25	6	1958	54°00′N	175°00′E	33	08	02	071	NW 2	SSW 2	6	16

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		6.5	18.29	33.04	0	6.5	18.29	33.04	25.96	206	
10	0	6.02	18.30	33.05	10	6.02	18.30	33.06	26.04	198	.0202
20	〃	5.92	18.30	33.06	20	5.92	18.30	33.06	26.05	197	.0400
30	〃	4.75	18.31	33.08	30	4.78	18.31	33.08	26.20	183	.0590
50	〃	3.87	18.31	33.08	50	3.87	18.31	33.08	26.30	173	.0946
75	3	3.44	18.34	33.13	75	3.44	18.34	33.13	26.38	166	.1371
100	〃	3.36	18.39	33.22	100	3.36	18.39	33.22	26.45	159	.1781
125	〃	3.41	18.47	33.37	125	3.41	18.47	33.37	26.56	149	.2169
150	〃	3.76	18.53	33.48	150	3.76	18.53	33.48	26.62	143	.2537
198	7	4.11	18.65	33.69	200	4.11	18.66	33.71	26.76	130	.3222
248	〃	4.17	18.78	33.93	250	4.17	18.78	33.93	29.93	114	.3842
297	〃	4.00	18.79	33.95	300	4.00	18.79	33.95	26.96	111	.4417
491	9	3.57	18.88	34.11	400	3.70	18.84	34.04	27.06	101	.5502
589	〃	3.49	18.93	34.20	500	3.57	18.88	34.11	27.14	94	.6507
781	〃	3.21	18.98	34.29	600	3.48	18.93	34.20	27.22	86	.7442
952	〃	2.97	19.00	34.33	800	3.19	18.98	34.29	27.32	77	.9162
1091	〃	2.79	19.02	34.36	1000	2.91	19.01	34.34	27.39	70	1.0742
1420	〃	2.40	19.07	34.45	1200	2.66	19.04	34.40	27.45	64	1.2202

Table 3. (Continued)

Station Os 20 (Os 44-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0420-0610	26	6	1948	56°00′N	175°00′E	18	06	02	064	S 1	S 1	8	13

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5 \triangle st$	$\triangle D$
0		6.6	18.38	33.21	0	6.6	18.38	33.21	26.08	194	
9	3	5.44	18.38	33.21	10	5.45	18.38	33.21	26.22	181	.0188
18	〃	5.15	18.38	33.21	20	5.06	18.38	33.21	26.26	177	.0367
27	〃	4.76	18.38	33.21	30	4.06	18.38	33.21	26.37	167	.0539
44	〃	3.23	18.38	33.21	50	3.09	18.39	33.22	26.48	156	.0862
68	7	2.64	18.41	33.26	75	2.51	18.41	33.26	26.56	149	.1245
90	〃	2.32	18.39	33.22	100	2.19	18.40	33.24	26.57	148	.1620
113	〃	2.00	18.40	33.24	125	2.23	18.43	33.30	26.62	143	.1988
135	〃	2.63	18.47	33.37	150	3.09	18.54	33.50	26.70	135	.2337
197	12	3.79	18.69	33.77	200	3.80	18.69	33.77	26.84	122	.2982
246	〃	3.80	18.75	33.87	250	3.79	18.75	33.87	26.93	114	.3580
295	〃	3.70	18.79	33.95	300	3.69	18.79	33.95	27.00	107	.4143
343	〃	3.57	18.82	34.00	400	3.53	18.85	34.05	27.10	98	.5188
476	18	3.47	18.89	34.12	500	3.45	18.90	34.15	27.18	90	.6153
571	〃	3.37	18.93	34.20	600	3.33	18.94	34.22	27.25	83	.7053
764	〃	3.10	18.98	34.29	800	3.06	18.99	34.31	27.35	74	.8713
959	〃	2.85	19.02	34.36	1000	2.81	19.02	34.36	27.42	67	1.0225
1165	〃	2.63	19.05	34.42	1200	2.59	19.05	34.42	27.48	62	1.1625
1458	〃	2.32	19.09	34.49							

Station Os 21 (Os 45-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1840-2010	26	6	1958	58°00′N	175°00′E	13	07	96	064	SE 3	SSE 1	8	13

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5 \triangle st$	$\triangle D$
0		6.7	18.39	33.22	0	6.7	18.39	33.22	26.08	194	
9	8	6.41	18.38	33.21	10	6.37	18.38	33.21	26.12	191	.0193
18	〃	5.78	18.38	33.21	20	5.42	18.38	33.21	26.22	181	.0379
26	〃	3.25	18.40	33.24	30	3.03	18.40	33.24	26.50	154	.0547
44	〃	2.72	18.40	33.24	50	2.61	18.40	33.24	26.54	151	.0852
68	10	2.36	18.41	33.26	75	2.31	18.41	33.26	26.57	148	.1351
90	〃	2.21	18.39	33.22	100	2.12	18.40	33.24	26.58	147	.1721
112	〃	1.95	18.44	33.31	125	1.80	18.44	33.31	26.65	140	.2082
135	〃	1.70	18.43	33.30	150	1.92	18.45	33.33	26.66	139	.2432
194	〃	3.44	18.66	33.71	200	3.52	18.67	33.73	26.84	122	.3087
243	〃	3.69	18.73	33.84	250	3.69	18.74	33.86	26.93	114	.3685
292	〃	3.62	18.77	33.91	300	3.62	18.78	33.93	26.99	108	.4250
387	〃	3.62	18.84	34.04	400	3.61	18.85	34.05	27.10	98	.5300
508	29	3.42	18.90	34.14	500	3.44	18.90	34.15	27.18	90	.6265
600	〃	3.34	18.92	34.18	600	3.34	18.92	34.18	27.22	86	.7180
783	〃	3.09	19.01	34.34	800	3.09	19.01	34.34	27.37	72	.8850
974	〃	2.84	19.02	34.36	1000	2.81	19.03	34.38	27.43	66	1.0340
1168	〃	2.63	19.06	34.43	1200	2.59	19.06	34.43	27.49	61	1.1720
1456	〃	2.31	19.10	34.51							

Table 3. (Continued)

Station Os 22 (Os 46-IGY)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0905-1120	27	6	1958	60°00′N	175°00′E	08	13	03	070	ENE 4	ENE 1	8	10.3

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		7.6	18.36	33.17	0	7.6	18.36	33.17	25.92	210	
9	12	7.51	18.34	33.13	10	7.09	18.34	33.13	25.95	207	.0209
18	〃	3.72	18.31	33.08	20	3.41	18.31	33.08	26.33	171	.0398
27	〃	2.90	18.36	33.17	30	2.84	18.37	33.19	26.48	156	.0562
45	〃	2.57	18.39	33.22	50	2.50	18.39	33.22	26.53	152	.0870
66	22	2.25	18.38	33.21	75	2.16	18.39	33.22	26.56	149	.1246
88	〃	2.00	18.39	33.22	100	1.82	18.40	33.24	26.60	145	.1615
110	〃	1.63	18.40	33.24	125	1.48	18.39	33.22	26.62	143	.1978
132	〃	1.43	18.38	33.21	150	1.34	18.38	33.21	26.61	144	.2338
214	34	1.14	18.42	33.28	200	1.14	18.41	33.26	26.66	139	.3046
233	〃	2.36	18.50	33.42	250	2.98	18.55	33.51	26.73	133	.3729
282	〃	3.47	18.63	33.66	300	3.58	18.66	33.71	26.82	124	.4379
377	〃	3.65	18.75	33.87	400	3.64	18.76	33.89	26.95	112	.5579
558	52	3.44	18.85	34.05	500	3.53	18.82	34.00	27.05	102	.6674
636	〃	3.38	18.92	34.18	600	3.40	18.89	34.13	27.16	92	.7679
790	〃	3.15	18.99	34.31	800	3.14	18.99	34.31	27.34	75	.9439
972	〃	2.91	19.03	34.38	1000	2.88	19.04	34.40	27.44	65	1.0949
1155	〃	2.69	19.07	34.45	1200	2.64	19.08	34.49	27.52	58	1.2299
1431	〃	2.37	19.10	34.51							

9. Data on Wet Displacement Volume and Wet Weight of Plankton Samples collected with North Pacific Standard Net

(北太平洋標準ネット採集によるプランクトン湿排水量及び湿重量記録)

Vertical hauls were carried out with a North Pacific Standard Net, 45 cm × 150 cm, conical, made of bolting silk GG 54, having approximately 0.33 mm mesh aperture, from about 150 meter depth (by length of wire run out) once at each hydrographic station.

A flow-meter was mounted at the center of the mouth ring of the net to register the amount of water filtered.

Unusual large organisms such as jellyfish were removed from the samples before they were submitted to the volume measurement, and number of these organisms was counted separately.

Wet displacement volume of the samples was measured by means of aspiration filtering apparatus, and wet weight was obtained by weighing the samples retained on the filter paper of this apparatus.

The data presented are the values in $1000m^3$ of water, except the number of large organisms which were removed before volume measurement was made.

The above measurement and calculation were made at the Plankton Laboratory of the University.

Table 4. Plankton volume data (45cm × 180cm, GG54, NORPAC

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Length of wire run out (m)	Revolutions of flow meter	Volume of water filtered (m^3)
21	Os25-IGY	50-00N 180-00	1958 June. 7	2030	150	1373	31.0
22	Os26-IGY	52-00N 179-28W	8	1630	150	1143	27.4
23	Os27-IGY	54-20N 180-00	9	1715	150	1173	28.2
24	Os28-IGY	56-00N 180-00	10	1910	150	1295	31.1
25	Os29-IGY	58-00N 180-00	11	2210	150	1150	27.6
26	Os30-IGY	60-00N 180-00	12	1855	150	1250	30.0
27	Os31-IGY	62-00N 175-00W	13	2148	70	390	9.8
28	Os32-IGY	60-00N 175-00W	14	1305	100	577	14.6
29	Os33-IGY	58-00N 175-00W	15	0517	150	1005	24.1
30	Os34-IGY	56-00N 175-00W	15	2130	150	1003	24.1
31	Os35-IGY	54-00N 175-00W	16	2130	150	770	18.5
32	Os36-IGY	52-42N 175-37W	17	1605	150	763	18.3
33	Os37-IGY	51-30N 175-00W	18	1500	150	760	18.2
34	Os38-IGY	50-00N 175-00W	19	0445	150	1043	25.0
35	Os40-IGY	50-00N 175-00E	22	2039	150	648	15.6
36	Os41-IGY	52-00N 175-00E	23	1405	150	1063	25.5
37	Os43-IGY	54-00N 175-00E	25	1325	150	785	18.8
38	Os44-IGY	56-05N 175-00E	26	1630	150	830	19.9
39	Os45-IGY	58-00N 175-00E	27	0635	150	878	21.1
40	Os46-IGY	60-00N 175-00E	27	2155	150	1103	26.5

Standard Net) in 1958 IGY Cruise 42 to the Bering Sea

Displacement volume per 1000 m^3 (cc)	Wet weight per 1000 m^3 (gr)	Number of large organisms removed before measurement (in a haul) Jellyfish	Remarks
710	645	1	Abundant *Calanus Cristatus*
584	361		Comparatively abundant *Calanus cristatus* and *C. plumchrus*
426	496		Comparatively abundant *Eucalanus bungii*
563	460		Comparatively abundant *Eucalanus bungii* and *Calanus plumchrus*
707	670		
733	517		Abundant *Calanus plumchrus*
408	255		Comparatively abundant diatoms
548	514		Exclusively adundant *Calanus plumchrus*
996	892		〃
353	270		Comparatively abundant *Calanus cristatus*
541	459	1	Comparatively abundant *Calanus plumchrus*
984	738	1	Exclusively abundant *Calanus plumchrus*
1126	1181		Comparatively abundant *Calanus cristatus*
960	880		Exclusively abundant *Calanus plumchrus*
449	301	1	Comparatively abundant *Calanus cristatus*
824	686	1	Abundant *Calanus plumchrus*
372	293		Comparatively abundant *Calanus cristatus* and *C. plumchrus*
352	276		Abundant *Calanus plumchrus*
1232	877		Abundant *Calanus cristatus*
868	679		Abundant *Calanus cristatus* and *C. plumchrus*

10. Data on Wet Displacement Volume and Wet Weight of Plankton Sample collected with Fish Larva Net

（稚魚ネット採集によるプランクトン湿排水量及び湿重量記録）

A fish-larva net, 130cm × 450cm, made of stramin in the anterior 300cm, and of boltng silk GG 54 in the posterior 150cm, was towed through approximately the surface water layer at a speed of about 2 knots for 10 minutes. The net was not equipped with flow-meter, so that the data are not available for quantitative studies; here only the relative abundance of catches can be discussed.

Large organisms such as jellyfish and squid larvae were removed from the samples before they were submitted to the measurement of volume and weight; the number of such removed organisms was counted.

Fish larvae contained in the samples were also removed before the measurement. The data on fish larvae are given on pp. 122-127.

Wet displacement of samples was measured with an aspiration filtering apparatus, and then the materials left on the filtering disc of the apparatus were weighed.

The above processing was carried out at the Plankton Laboratory of the University.

Table 5. Plankton volume data (Fish-larva Net)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Displacement volume of total samples in a tow (cc)	Wet weight of total samples in a tow (gr)
13		42-49N 151-51E	1958May 28	2021	48.0	30.4
14		43-43N 156-30E	29	2008	336.0	308.0
15		44-40N 160-59E	30	1951	208.0	196.8
16		45-44N 165-07E	31	2041	48.0	32.0
17		46-48N 168-41E	June 1	2028	76.0	56.0
18		48-07N 174-23E	2	2016	88.0	76.0
19	Os25-IGY	50-00N 180-00	7	2155	288.0	212.0
20	Os26-IGY	52-00N 179-28W	8	1910	144.0	108.0
21	Os27-IGY	54-20N 180-00	9	1824	80.0	60.0
22		54-20N 180-00	9	2132	64.0	64.0
23	Os28-IGY	56-00N 180-00	10	2144	120.0	63.0
24	Os29-IGY	58-00N 180-00	11	2320	248.0	198.4
25	Os30-IGY	60-00N 180-00	12	1922	136.0	120.4
26		60-16N 179-30W	12	2220	624.0	488.0
27	Os31-IGY	62-00N 175-00W	13	2222	152.0	132.0
28	Os32-IGY	60-00N 175-00W	14	1332	16.0	120.0
29		58-48N 174-58W	14	2153	3400.0	3300.0
30	Os33-IGY	58-00N 175-00W	15	0537	248.0	174.0
31	Os34-IGY	56-00N 175-00W	15	2145	24.0	20.0
32	Os35-IGY	54-00N 175-00W	16	2220	52.0	32.8
33		52-41N 175-27W	17	2108	80.5	57.5
34	Os37-IGY	51-30N 175-00W	18	1650	8.0	6.4
35		50-41N 175-05W	18	2157	56.0	46.4
36	Os38-IGY	50-00N 175-00W	19	0503	64.0	56.0
37		50-03N 178-29W	19	2106	45.0	46.4
38		49-41N 179-12E	20	2015	48.0	44.0
39		49-17N 178-35E	21	2014	96.0	34.4
40	Os40-IGY	50-00N 175-00E	22	2115	152.0	129.6
41	Os41-IGY	52-00N 175-00E	23	1440	1.0	1.0
42	Os41-IGY	52-00N 175-00E	23	2323	216.0	190.4
43	Os43-IGY	54-00N 175-00E	25	1340	12.0	4.0
44		54-37N 175-00E	25	2101	80.0	62.4
45	Os44-IGY	56-05N 175-00E	26	1715	28.0	16.0
46		56-39N 175-00E	26	2115	64.0	54.4
47	Os45-IGY	58-00N 175-00E	27	0706	28.0	18.4
48	Os46-IGY	60-00N 175-00E	27	2215	124.0	102.4
49		57-22N 171-40E	28	2128	144.0	120.8
50		54-00N 169-40E	29	2105	40.0	33.6

in 1958 IGY Cruise 42 to the Bering Sea

Number of large organisms removed before measurement (in a haul)			Remarks
Jellyfish	Squid	Other	
208			Abundant *Calanus plumchrus*
152	72	8	Exclusively abundant *Calanus plumchrus*
8	8	8	Exclusively abundant *Calanus cristatus*
96			Comparatively abundant *Eucalanus bungii*
8			Comparatively abundant *Calanus plumchrus* and *Calanus cristatus*
160		24	Comparatively abundant *Sagitta elegans* and *Calanus plumchrus*
16			Exclusively abundant *Calanus plumchrus*
			Abundant *Calanus plumchrus*
			〃
			Abundant small-sized copepods and less abundant *Sagitta elegans*
16			Comparatively abundant *Calanus cristatus* and *Calanus plumchrus*
968			Abundant *Calanus cristatus*
			Exclusively abundant *Calanus plumchrus*
			Exclusively abundant *Themisto*
			〃
			〃
			〃
			Abundant *Calanus plumchrus*
40			Comparatively abundant *Calanus plumchrus* and *Sagitta elegans*
1360	24		Abundant jellyfish
904			Abundant jellyfish and *Clione*
24	168		Comparatively abundant *Themisto* and *Calanus plumchrus*
			Exclusively abundant *Calanus plumchrus*
32			Comparatively abundant *Calanus plumchrus* and *Themisto*
			Comparatively abundant *Calanus plumchrus*
32			Abundant *Calanus plumchrus* and less abundant *Sagitta elegans*
			Exclusively abundant *Themisto*
304			Abundant *Calanus plumchrus*
8			Exclusively abundant *Themisto*
			Abundant small-sized copepods and less abundant *Themisto*
			〃 〃
			〃 〃
4712			Abundant *Themisto*
			Abundant *Themisto* and small-sized copepods
			Exclusively abundant *Themisto*

11. Data on Wet Displacement Volume of Plankton Samples collected with Fine Mesh Net

（細目ネット採集によるプランクトン湿排水量及び湿重量記録）

Vetical hauls with a fine mesh net, 30cm × 150cm, conical, made of bolting silk XX13, having approximately 0.11mm mesh aperture, were carried out, from about 100 meter depth to the surface (by length of wire run out) once at each hydrographic station.

A current-meter (flow-meter) was mounted at the center of the mouth ring of the net to register the volume of water filtered.

Wet displacement volume of the samples was measured by means of aspiration filtering apparatus.

Wet displacement volume of the samples is represented in cc 1000 m^3 and the number of dominant species is given in individuals/m^3 or colonies/m^3, or simply by mentioning abundance, very common, or occasional, in case the current-meter had not operated.

The measurement was made at the Hokkaido Regional Fisheries Research Laboratory.

Table 6. Plankton volume data (30cm × 150cm, XX13 Net)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Length of wire run out (m)	Wire angle	Revolutions of flow-meter
1	Os25-IGY	50-00N 180-00	1958 June 7	2030	100	25	563
2	Os26-IGY	52-00N 179-28W	8	1630	〃	25	485
3	Os28-IGY	56-00N 180-00	10	1907	〃	24	555
4	Os30-IGY	60-01N 180-00	12	1900	〃	4	650
5	Os31-IGY	62-00N 175-00W	13	2155	〃	20	250
6	Os32-IGY	60-00N 175-00W	14	1318	〃	25	474
7	Os33-IGY	58-00N 175-00W	15	0523	〃	0	400
8	Os34-IGY	56-00N 175-00W	15	2135	〃	2	440
9	Os35-IGY	54-00N 175-00W	16	2135	〃	3	400
10	Os37-IGY	51-30N 175-00W	18	1510	〃	17	353
11	Os38-IGY	50-00N 175-00W	19	0458	〃	18	541
12	Os40-IGY	50-00N 175-00E	22	2040	〃	17	555
13	Os41-IGY	52-00N 175-00E	23	1420	〃	30	651
14	Os43-IGY	54-00N 175-00E	25	1333	〃	9	442
15	Os44-IGY	56-05N 175-00E	26	1645	〃	4	430
16	Os45-IGY	58-00N 175-00E	27	0645	〃	13	—
17	Os46-IGY	60-00N 175-00E	27	2205	〃	21	558

in 1958 IGY Cruise 42 to the Bering Sea

Volume of water filtered(m^3)	Displacement volume per $1000m^3$ (cc)	Dominant species (Individuals or colonies/m^3)
2.5	1581	Micro copepod (13600), *Corethron hystrix* (9200), *Rh.hebetata* f.*s.* (6800) *Ch. atlanticus* (3600), Others (9200)
2.2	917	*Rh.hebetata* f.*s.* (324400), *Ch. radicans* (154000), *Ch. diadema* (103600) Others(313500)
2.5	1600	Micro-cepepods (35600), *Coscinodicus radiatus* (12800), Others (9600)
2.5	1126	Micro-copedods (38000), *Cos. radiatus* (8800), *Rh. hebetata* f. *s.* (6000), Others (5600)
2.8	1327	*Thal'ra Nordenskiöldi* (349100), *Fragilaria* sp. (287000), *Ch. atlanticus* (117800) Others (428400)
2.9	1402	*Cos. radiatus* (48500), *Rh. hebetata* f. *s.* (7220), Micro-copepods (4472), Others (37252)
1.1	1111	*Cos. radiatus* (52700), Micro-copepods (46400), Others (35500)
2.1	505	Micro-copepods (31900), *Cos. radiatus* (3810), Others (1900)
1.8	1768	Micro-copepod (7180), *Cos. radiatus* (4440), Others (1670)
2.0	1887	*Ch. radicans* (506300), *Ch. diadema* (153800), *Rh. alata* (78800), Others (315000)
2.0	4502	Micro-copepods (35500), *Th'rix longissima* (5000), *Cos. radiatus* (5500) Others (1012500)
2.5	1000	Micro-copepods (26400), *Th'rix longissima* (2400), Others (2000)
2.9	1536	Micro-copepods (137600), *Th'rix longissima* (1720), Others (4130)
2.0	1508	Micro-copepods (27000), *Cos. radiatus* (1500), Others (2500)
2.0	1804	Micro-copepods (63500), Others (3500)
—	—	Micro-copepods (very common), Others (occasional)
2.5	1195	*Cos. radiatus* (75200), Micro-copepods (38800)

12. Data on fish Larvae Collected with Fish Larva Net
(稚魚ネット採集による稚魚記録)

Fish larva net, 130cm in mouth diameter and 450cm in length, was towed at the surface layer at a speed as low as about 2 knots for ten minutes keeping the net exposed to the extent of half of mouth ring above the sea surface, at every hydrographic station as well as at about one hour past of sunset time.

Identification of fish larvae was made by S. Sato, K. Kobayashi and other members of the Laboratory of Ichthyology of the University.

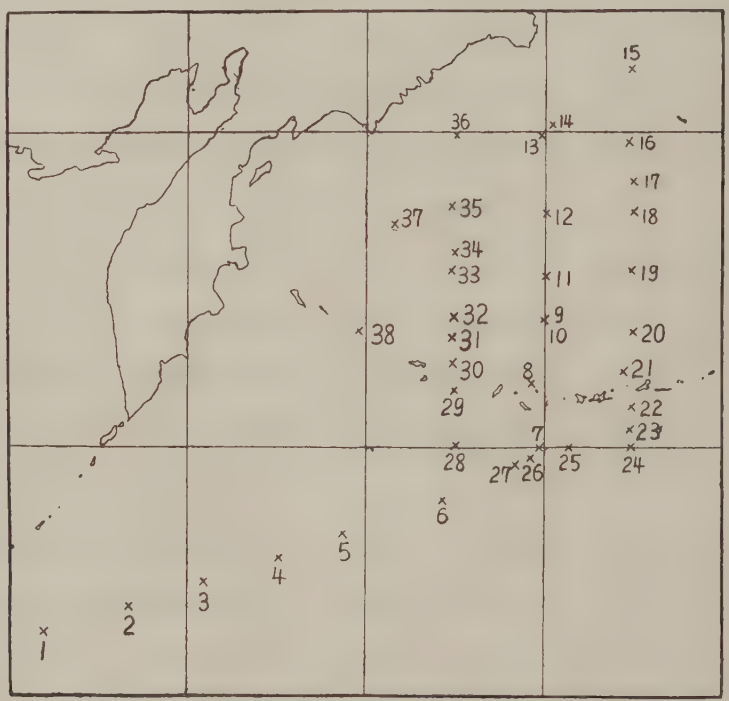

Fig. 2 Station of fish larva net tow in 1958 cruise 42 of the "Oshoro Maru"

Table 7. Data on collection of fish larvae in 1958 cruise 42 of the "Oshoro Maru".

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish-larvae collected (Species or group)	Number of individuals	Range of total length (mm)
1		42°-49′ N	May 28	2021	*Pleurogrammus monopterygius*	1	35.4
		151°-51′ E			*Hemilepidotus*	26	16.3-29.3
2		43°-43′ N	29	2008	*Tarletonbeania crenularis*	1	46.3
		156°-30′ E			*Hemilepidotus*	3	22.0-27.0
3		44°-40′ N	30	1951	*Pleurogrammus monopterygius*	2	21.4-22.8
		160°-59′ E					
4		45°-44′ N	31	2040	*Pleurogrammus monopterygius*	1	46.5
		165°-07′ E			*Hexagrammos* (A)	3	30.3-33.7
					Hemilepidotus	28	16.6-23.6
5		46°-48′ N	June 1	2028	*Pleurogrammus monopterygius*	9	27.9-44.5
		168°-41′ E			*Hemilepidotus*	11	19.1-26.8
6		48°-07′ N	2	2016	*Tarletonbeania crenularis*	1	54.0
		174°-23′ E			*Lumpenus*	1	33.7
					Pleurogrammus monopterygius	1	27.6
					Hemilepidotus	11	13.8-22.7
7	1	50°-00′ N	7	2155	*Lumpenus*	2	34.9-36.4
		180°-00′ W			*Pleurogrammus monopterygius*	10	27.4-43.0
					Hexagrammos (B)	2	37.9-40.7
					Hemilepidotus	57	14.2-26.3
8	2	52°-00′ N	8	1910	*Pleurogrammus monopterygius*	1	13.8
		179°-28′ W			*Hexagrammos* (A)	1	21.1
					Hemilepidotus	1	25.3
9	3	54°-20′ N	9	1824	*Hexagrammos* (A)	3	17.7-20.5
		180°-00′ W					
10		54°-20′ N	9	2132	*Lumpenus*	2	23.6-24.2
		180°-00′ W			*Pleurogrammus monopterygius*	6	27.7-33.9
					Hemilepidotus	81	13.3-30.1
					Unidentified (A)	207	6.3- 9.7
					Unidentified (C)	34	7.6-11.8

Table 7. (Continued)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish larvae collected (Species or group)	Number of individuals	Range of total length (mm)
11	4	56°-00′ N 180°-00′ W	June 10	2144	*Bathymaster*	1	49.9
					Lupmenus	1	28.3
					Pleurogrammus monopterygius	2	35.2-38.5
					Hemilepidotus	16	17.6-24.5
12	5	58°-00′ N 180°-00′ W	11	2320	*Bathymaster*	1	50.2
					Pleurogrammus monopterygius	9	30.3-41.4
					Hexagrammos (A)	5	19.7-30.9
					Hemilepidotus	40	13.8-26.4
13	6	60°-00′ N 180°-00′ W	12	1922	*Pleurogrammus monopterygius*	5	31.0-43.9
					Hemilepidotus	1	21.3
14		60°-16′ N 179°-30′ W	12	2220	*Bathymaster*	1	47.9
					Pleurogrammus monopterygius	7	28.5-44.4
					Hemilepidotus	26	13.9-26.5
15	7	62°-00′ N 175°-00′ W	13	2222	*Hemilepidotus*	1	13.3
16	8	60°-00′ N 175°-00′ W	14	1332	No fish-larva		
17		58°-48′ N 174°-58′ W	14	2153	*Lumpenus*	1	32.7
					Pleurogrammus monopterygius	18	29.5-43.5
					Hemilepidotus	52	13.6-29.7
					Liparidae	1	19.6
					Pleuronectidae (A)	3	28.0-31.3
					Pleuronectidae (B)	1	23.9
18	9	58°-00′ N 175°-00′ W	15	0537	*Hexagrammos* (A)	9	15.7-23.6
					Pleuronectidae (A)	1	24.8
19	10	56°-00′ N 175°-00′ W	15	2145	*Anoplopoma fimbria*	5	15.6-17.8
					Pleurogrammus monopterygius	6	37.0-44.8
					Hexagrammos (A)	28	16.7-30.3
					Hemilepidotus	6	16.7-26.6
					Gadidae	1	23.5
					Unidentified (C)	13	10.3-13.5

Table 7. (Continued)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish-larvae collected (Species or group)	Number of individuals	Range of total length (mm)
20	11	54°-00′ N	June 16	2220	*Lumpenus*	3	34.2-38.6
		175°-00′ W			*Anoplopoma fimbria*	11	14.8-17.4
					Hexagrammos (A)	3	17.7-20.5
					Hemilepidotus	2	22.6-28.6
					Liparidae	1	19.5
					Pleuronectidae (B)	1	27.7
					Unidentified (C)	317	11.1-15.0
21		52°-41′ N	17	2108	*Anoplopoma fimbria*	3	15.6-17.1
		175°-27′ W			*Hexagrammos* (A)	1	19.5
					Hemilepidotus	4	15.4-28.3
					Unidentified (C)	13	11.7-13.7
22	13	51°-30′ N	18	1650	*Anoplopoma fimbria*	5	11.5-16.5
		175°-00′ W			*Hexagrammos* (A)	4	16.5-23.9
					Unidentified (C)	7	12.4-13.3
23		50°-41′ N	18	2157	*Ammodytes hexapterus*	1	32.8
		175°-05′ W			*Lumpenus*	3	40.3-41.8
					Anoplopoma fimbria	2	15.0-19.4
					Hexagrammos (A)	10	20.2-37.6
					Hexagrammos (B)	1	37.6
					Hemilepidotus	73	16.3-25.8
					Unidentified (C)	45	8.8-12.4
24	14	50°-00′ N	19	0503	*Pleurogrammus monopterygius*	3	40.6-50.8
		175°-00′ W			*Hexagrammos* (A)	9	13.3-29.5
					Unidentified (A)	3	9.8-11.0
					Unidentified (C)	28	9.4-10.7
25		50°-03′ N	19	2106	*Lumpenus*	1	41.4
		178°-29′ W			*Hexagrammos* (A)	21	14.3-30.6
					Hemilepidotus	55	16.5-26.5
					Unidentified (A)	6	9.6-11.2
					Unidentified (C)	1	12.8

Table 7. (Continued)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish-larvae collected (Species or group)	Number of individuals	Range of total length (mm)
26		49°-41′ N 179°-12′ E	June 20	2015	*Lumpenus*	2	31.3-36.1
					Anoplopoma fimbria	2	18.1-19.2
					Pleurogrammus monopterygius	8	38.8-62.4
					Hexagrammos (A)	14	14.8-27.4
					Hemilepidotus	92	14.9-26.2
					Myoxocephalus	1	19.8
					Unidentified (A)	3	10.8-11.7
					Unidentified (C)	7	11.5-14.1
27		49°-17′ N 178°-35′ E	21	2014	*Pleurogrammus monopterygius*	8	42.3-48.3
					Hexagrammos (A)	2	16.1-24.1
					Hemilepidotus	22	16.4-22.7
					Unidentified (C)	5	13.3-14.0
28	16	50°-00′ N 175°-00′ E	22	2115	*Lumpenus*	1	
					Pleurogrammus monopterygius	1	41.8
					Hexagrammos (A)	4	14.8-21.0
					Hemilepidotus	1	21.5
					Liparidae	1	19.3
					Unidentified (C)	29	11.7-14.5
29	17	52°-00′ N 175°-00′ E	23	1440	*Hexagrammos* (A)	2	14.2-20.7
					Unidentified (C)	2	11.3-12.7
30	18	53°-00′ N 175°-00′ E	23	2323	*Lumpenus*	10	32.3-38.6
					Hexagrammos (A)	3	16.8-25.0
					Hemilepidotus	16	15.3-28.4
					Liparidae	2	17.6-20.7
					Unidentified (A)	102	7.3-12.4
31	19	54° 00′ N 175°-00′ E	25	1340	Unidentified (A)	3	ca 9.7
32		54°-37′ N 175°-00′ E	25	2101	*Pleurogrammus monopterygius*	2	30.5-32.3
					Hemilepidotus	3	18.4-22.4
					Myoxocephalus	1	19.4
					Unidentified (A)	8	8.3-11.1
					Unidentified (C)	26	11.2-14.3

Table 7. (Continued)

No. of collection	Corresponding No. of hydrographic station	Position	Ship's date	Ship's time	Fish-larvae collected (Species or group)	Number of individuals	Range of total length (mm)
33	20	56°-05′ N 175°-00′ E	26	1715	Unidentified (C)	4	11.6-12.4
34		56°-39′ N 175°-05′ E	26	2115	*Hemilepidotus*	9	15.7-26.3
35	21	58°-00′ N 175°-00′ E	27	0706	*Hexagrammos* (A) *Hemilepidotus*	2 5	16.8-17.4 17.4-26.3
36	22	60°-00′ N 175°-00′ E	27	2215	*Hexagrammos* (A) *Hemilepidotus* Unidentified (A) Unidentified (B)	20 2 9 2	14.3-28.4 18.9-24.5 9.8-12.2 16.5-18.3
37		57°-22′ N 171°-40′ E	28	2128	*Bathymaster* *Pleurogrammus monopterygius* *Hemilepidotus*	1 3 12	54.1 40.7-44.4 19.7-35.0
38		54°-00′ N 169°-40′ E	29	2105	*Bathymaster* *Ammodytes hexapterus* *Lumpenus* *Hemilepidotus* Pleuronectidae (B) Unidentified (A) Unidentified (C)	3 14 2 33 1 42 93	41.5-53.7 32.7-43.0 34.8-41.3 18.7-32.3 23.1 8.5-13.5 9.1-14.9

13. Data on Salmon Gill-Net Fishing
(鮭鱒流網試驗)

Operation was supervised by captain and deck officers, and all hands of crew and cadets were engaged in the work.

A series of gill-nets having different mesh sizes were set at seven different localities.

When the nets were hauld to deck, fishes were examined whether they were still alive or already dead. At the same time number of fish caught with net was counted by separately the levels of net into upper, middle and lower portions.

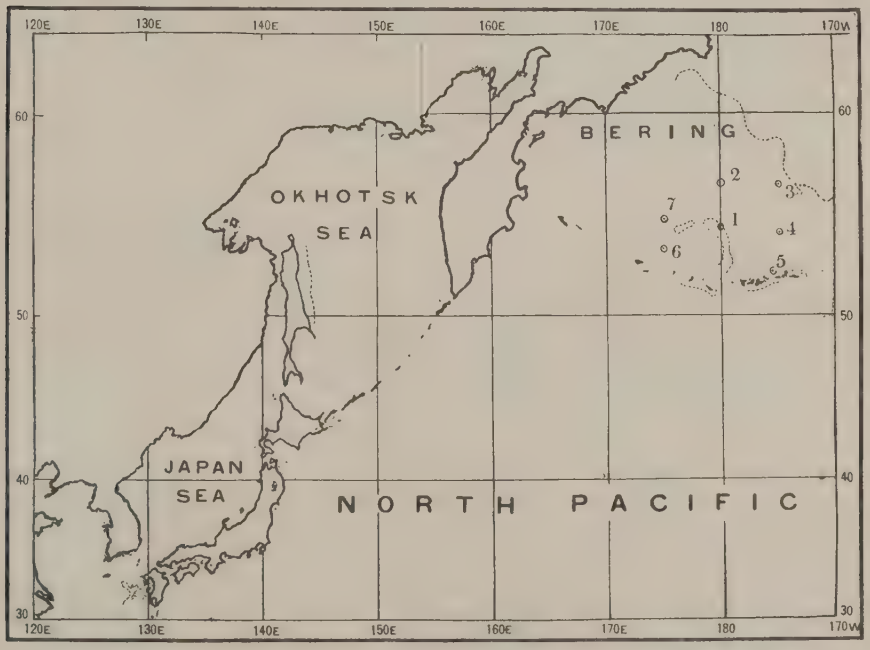

Fig. 3 Location of salmon gill-net set in 1958 cruise 42 of the "Oshoro Maru"

Table 8. Data on salmon fishing operation in 1958

No. of fishing	Date and time (Ship's time)		Position of net set		Amount of net cast (Tan) (1Tan=49.2m long, 5.3~5.4m depth)				
	Net set	Net haul	Latitude	Longitude	Mesh 4.5Sun (13.6cm)	Mesh 4.0Sun (12.1cm)	Mesh 3.5Sun (10.6cm)	Mesh 3.0Sun (9.1cm)	Mesh 2.5Sun (7.6cm)
1	6~ 9 1945	6~10 0315	54°-20′ N	180°-00′	5	25	10	7	5
2	6~10 1930	6~11 0315	56°-00′ N	180°-00′	5	25	10	7	5
3	6~15 1925	6~16 0345	56°-00′ N	175°-00′ W	5	25	10	7	5
4	6~16 1940	6~17 0405	54°-00′ N	175°-00′ W	5	25	10	7	5
5	6~17 1850	6~18 0350	52°-40′ N	175°-36′ W	5	25	10	7	5
6	6~24 1835	6~25 0315	53°-15′ N	173°-44′ E	5	25	10	7	5
7	6~25 1805	6~26 0320	54°-38′ N	175°-00′ E	5	25	10	7	5

Table 9. Data on catch of salmon in 1958

No. of fishing	Number of fish caugnt														
	4.5 Sun					4.0 Sun					3.5 Sun				
	Alive or dead		Layer in the net			Alive or dead		Layer in the net			Alive or dead		Layer in the net		
	a	d	up.	mid.	low.	a	d	up.	mid.	low.	a	d	up.	mid.	low.
1	4	4	8	0	0	13	24	31	6	0	1	3	3	1	0
2	1	0	1	0	0	0	1	1	0	0	0	3	2	1	0
3	2	3	4	1	0	11	22	26	7	0	9	7	16	0	0
4	4	2	5	0	1	9	16	14	7	4	2	7	4	5	0
5	3	3	2	3	1	19	30	15	30	4	7	12	4	10	5
6	4	4	1	4	3	30	36	23	34	9	15	20	7	20	8
7	5	5	2	8	0	24	18	11	29	2	11	9	6	13	1

cruise 42 to the Bering Waters.

Trinal gill-net*	Direction of drift "toward" (True bearing)	Weather	Wind		Temperature (°C)					Colour of sea	Transparency (m)	Current "toward"
			Direction	Force	0 (m)	10 (m)	20 (m)	30 (m)	50 (m)			
3	165	r	NNW	4	4.4	4.4	4.4	4.3	3.9	3	13	SW
3	200	c	N	2	4.1	3.8	3.7	3.7	2.7	4	17	SE
3	200	o	SW	4	5.8	5.7	5.2	5.2	5.0	3	14	NNW
3	5	o	S	2	6.6	5.4	5.0	4.9	4.4	3	12	ENE
3	320	c	ESE	2	6.5	6.0	5.3	5.3	5.0	4	10	SE
3	15	c	SSW	2	6.3	6.0	5.7	5.3	5.0	3	13	NNE
3	170	o	WNW	2	6.5	5.7	5.7	4.2	4.2	3	15	SE/S

* Sanmai-ami (三枚網)

cruise 42 to the Bering Waters.

3.0 Sun					2.5 Sun					Trinal gill-net					Sockeye	Chum	Pink	King	Total
Alive or dead		Layer in the net			Alive or dead		Layer in the net			Alive or dead		Layer in the net							
a	d	up.	mid.	low.	a	d	up.	mid.	low.	a	d	up.	mid.	low.					
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	8	9	0	49
0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	1	3	0	6
1	2	3	0	0	0	0	0	0	0	0	2	1	1	0	30	5	22	2	59
2	3	1	4	0	1	4	1	2	2	0	0	0	0	0	16	13	6	15	50
6	8	3	10	1	2	9	0	9	2	0	3	2	0	1	9	15	4	74	102
0	14	1	10	3	2	6	1	6	1	0	0	0	0	0	4	123	4	0	131
35	7	3	38	1	2	5	0	6	1	0	1	0	1	0	9	106	6	1	122

14. Data on Measurement of Biological Characters of Salmon

Measurement was made by members aboard men and age determination was made by T. Kubo.
Abbreviations:

Sex, F: Female
M: Male
F. L. : Fork length
B. W. : Body Weight

Table 10. Data on measurement of salmon in 1958 cruise 42 to the Bering Sea.

1. Pink salmon* カラフトマス

No. of fishing	Sex	F.L. (mm)	B.W. (g)
2	F	480	1450
	F	412	1170
	M	542	2100
	M	540	2150
3	F	538	2100
	F	504	1550
	F	497	1650
	F	464	1200
	F	463	1400
	F	453	1050
	F	451	1150
	F	440	880
	F	435	1120
	F	426	950
	M	526	1800
	M	519	1650
	M	514	1800
	M	512	1650
	M	510	1550
	M	492	1550
	M	460	1000
	M	433	1350
	M	408	820
4	F	486	1700
	F	461	1300
	M	493	1550
	M	489	1140
	M	459	1200
	M	458	1300
4	M	435	1100
5	F	442	950
	M	518	1950
	M	492	1500
	M	461	1350
6	F	458	1400
	F	456	1450
	M	468	1350
	M	460	1400
7	F	448	
	F	386	
	F	368	
	M	508	
	M	473	
	—	442	

* All 2-years-old

2. Chun Salmon シロザケ

No. of fishing	Sex	F.L. (mm)	B.W. (g)	Age
2	F	515	1780	4
3	M	557	2200	5
	M	534	1900	4
	M	512	1820	—
4	F	594	2950	4
	F	588	3200	4
	F	573	2750	4
	F	505	1550	4
	F	602	2950	3
	F	566	2280	3
	F	561	2350	3
	M	606	3250	5
	M	596	2600	4
	M	557	2480	4
	M	573	2650	3
	M	556	2500	3
	M	392	680	3
5	F	628	3400	5
	F	627	3300	5
	F	618	3100	4
	F	613	3500	4
	F	595	3000	4
	F	594	2920	4
	F	575	2600	4
	F	559	2500	4
	F	554	2800	4
	F	540	2400	4
	M	574	2400	4
	M	556	2000	4
	M	530	1900	4
	M	524	2050	4
	M	445	1050	3
6	F	617	3800	5
	F	613	3200	5
	F	598	3350	5
	F	570	2200	5
	F	530	2200	5
	F	604	3300	4
	F	603	2850	4

No. of fishing	Sex	F.L. (mm)	B.W. (g)	Age
6	F	598	2600	4
	F	592	2750	4
	F	590	3000	4
	F	584	2500	4
	F	584	2400	4
	F	580	2600	4
	F	580	2350	4
	F	578	2700	4
	F	578	2450	4
	F	571	3000	4
	F	564	2500	4
	F	561	2400	4
	F	557	2200	4
	F	546	2350	4
	F	542	2400	4
	F	542	2250	4
	F	535	2150	4
	F	535	2100	4
	F	517	1780	4
	F	502	1700	4
	F	502	1550	4
	F	498	1750	4
	F	498	1500	4
	F	497	1700	4
	F	494	1450	4
	F	484	1700	4
	F	482	1500	4
	F	474	1550	4
	F	473	1550	4
	F	464	1400	4
	F	516	2050	3
	F	505	1850	3
	F	502	1650	3
	F	494	1500	3
	F	488	1480	3
	F	486	1500	3
	F	476	1500	3
	F	475	1550	3
	F	466	1500	3
	F	466	1500	3
	F	450	1400	3
	F	450	1350	3

No. of fishing	Sex	F.L. (mm)	B.W. (g)	Age
6	F	446	1050	3
	F	440	1350	3
	F	439	1350	3
	F	437	900	3
	F	434	900	3
	F	430	900	3
	F	430	900	3
	F	415	900	3
	F	404	1000	3
	F	401	760	3
	F	392	600	3
	F	493	1600	—
	M	635	3800	5
	M	654	4200	4
	M	650	4250	4
	M	647	4400	4
	M	645	4400	4
	M	631	3300	4
	M	611	3050	4
	M	610	3450	4
	M	572	2460	4
	M	570	2500	4
	M	570	2200	4
	M	567	2500	4
	M	552	2400	4
	M	532	1900	4
	M	530	1700	4
	M	523	2150	4
	M	514	2000	4
	M	504	1640	4
	M	502	1800	4
	M	502	1680	4
	M	498	1500	4
	M	496	1750	4
	M	495	1700	4
	M	489	1520	4
	M	487	1500	4
	M	471	1700	4
	M	453	1400	4
	M	570	2350	3
	M	526	1850	3
	M	515	1900	3

No. of fishing	Sex	F.L. (mm)	B.W. (g)	Age
6	M	514	1950	3
	M	513	1700	3
	M	512	1800	3
	M	495	1700	3
	M	493	1500	3
	M	482	1500	3
	M	478	1650	3
	M	474	1450	3
	M	467	1550	3
	M	463	1550	3
	M	462	1450	3
	M	452	1100	3
	M	444	1150	3
	M	434	950	3
	M	434	950	3
	M	428	900	3
	M	423	750	3
	M	422	850	3
	M	422	850	3
	M	419	920	3
	M	412	850	3
	M	400	780	3
	M	577	2450	—
	M	576	2350	—
	M	506	2000	—
	M	471	1350	—
	M	448	1350	—
	—	670	4300	4
	—	602	3350	4
	—	538	2300	4
7	F	632		5
	F	618		5
	F	594		5
	F	616		4
	F	609		4
	F	605		4
	F	587		4
	F	584		4
	F	582		4
	F	576		4
	F	572		4

Oshoro Maru cruise 42 to the Bering Sea

No. of fishing	Sex	F.L. (mm)	B.W. (g)	Age	No. of fishing	Sex	F.L. (mm)	B.W. (g)	Age
7	F	570		4	7	M	605		4
	F	567		4		M	570		4
	F	566		4		M	534		4
	F	564		4		M	534		4
	F	558		4		M	497		4
	F	542		4		M	495		4
	F	534		4		M	494		4
	F	529		4		M	490		4
	F	526		4		M	488		4
	F	508		4		M	487		4
	F	505		4		M	478		4
	F	499		4		M	468		4
	F	488		4		M	450		4
	F	444		4		M	442		4
	F	439		4		M	568		3
	F	528		3		M	498		3
	F	508		3		M	484		3
	F	497		3		M	482		3
	F	478		3		M	480		3
	F	450		3		M	470		3
	F	440		3		M	466		3
	F	436		3		M	466		3
	F	433		3		M	466		3
	F	432		3		M	459		3
	F	430		3		M	453		3
	F	425		3		M	450		3
	F	423		3		M	448		3
	F	420		3		M	447		3
	F	420		3		M	444		3
	F	418		3		M	437		3
	F	418		3		M	436		3
	F	415		3		M	436		3
	F	414		3		M	436		3
	F	397		3		M	436		3
	F	606		—		M	435		3
	F	584		—		M	432		3
	F	522		—		M	432		3
	F	502		—		M	430		3
	F	457		—		M	427		3
	M	624		5		M	425		3
	M	565		5		M	422		3
	M	606		4		M	420		3

No. of fishing	Sex	F.L. (mm)	B.W. (g)	Age
7	M	419		3
	M	418		3
	M	414		3
	M	410		3
	M	406		3
	M	405		3
	M	376		3
	M	373		3
	M	500		—
	M	458		—
	M	408		—

3. Sockeye salmon ベニザケ

No. of fishing	Sex	F.L. (mm)	B.W. (g)	Age
2	F	598	3050	6₃
	F	516	2100	5₃
3	F	597	3200	6₂
	F	621	3300	6₃
	F	621	3250	6₃
	F	588	2850	6₃
	F	583	2600	6₃
	F	562	2350	6₃
	F	448	1100	6₄
	F	609	3100	5₂
	F	584	2650	5₂
	F	582	2700	5₂
	F	576	2400	5₂
	F	532	2100	5₃
	F	530	2050	5₃
	F	511	1500	5₃
	F	590	3050	—
	M	638	3650	6₃
	M	629	3400	6₃
	M	542	2280	6₃
	M	677	4200	5₂
	M	637	3550	5₂
	M	625	3500	5₂
	M	623	3200	5₂
	M	589	2950	5₃
	M	541	2200	5₃
3	M	515	1700	5₃
	M	492	1650	5₃
4	F	646	3500	6₃
	F	640	3350	6₃
	F	588	2550	6₃
	F	578	2530	6₃
	F	614	3350	5₂
	F	611	3350	5₂
	F	574	2800	5₂
	M	644	4100	5₂
	M	643	3820	5₂
	M	634	4000	5₂
	M	615	3300	5₂
	M	566	2600	5₃
	M	513	1700	5₃
	M	593	2950	4₂
	M	554	2500	4₂
5	F	591	3100	6₃
	F	556	2350	5₃
	F	450	1000	4₂
	F	566	2700	—
	M	643	3700	6₃
	M	640	4100	5₂
	M	558	2650	4₂
	M	552	2650	4₂
	M	307	250	—
6	M	482	1400	6₄
	M	348	400	4₃
	M	313	280	3₂
	M	532	2050	—
7	F	584		6₃
	F	556		6₃
	M	560		7₄
	M	574		5₃
	M	475		5₃
	M	468		5₃
	M	344		4₃
	—	562		6₃
	—	597		—

4. King salmonマスノスケ

No. of fishing	Sex	F.L. (mm)	B.W. (g)
3	F	592	2500
	F	448	1050
4	F	654	3600
	F	534	2000
	F	377	650
	F	358	550
	F	313	350
	F	298	350
	M	600	2900
	M	580	2450
	M	545	2400
	M	508	1750
	M	454	1450
	M	396	750
	M	388	730
	M	361	570
	—	494	1700
5	F	682	4200
	F	638	3200
	F	629	3050
	F	604	2650
	F	572	2500
	F	568	2500
	F	564	2250
	F	545	2300
	F	540	2150
	F	538	2000
	F	537	2100
	F	535	2150
	F	532	2200
	F	532	2000
	F	530	1800
	F	522	1900
	F	522	1900
	F	514	1800
	F	513	1950
	F	508	2000
	F	503	1580
	F	498	1650
	F	482	1450

No. of fishing	Sex	F.L. (mm)	B.W. (g)
5	F	481	1400
	F	435	1100
	F	406	850
	F	405	850
	F	385	720
	F	348	400
	M	675	3800
	M	648	3150
	M	594	2700
	M	592	2650
	M	581	2550
	M	563	2800
	M	560	2200
	M	548	2500
	M	538	2000
	M	536	2200
	M	530	2000
	M	515	1800
	M	513	1850
	M	512	1800
	M	506	1750
	M	505	1560
	M	502	1850
	M	488	1600
	M	483	1600
	M	482	1500
	M	438	850
	M	422	1000
	M	400	800
	M	400	780
	M	398	800
	M	398	750
	M	392	750
	M	388	700
	M	387	750
	M	386	750
	M	380	650
	M	380	550
	M	377	650
	M	373	630
	M	373	620
	M	371	650

No. of fishing	Sex	F.L. (mm)	B.W. (g)
5	M	370	600
	M	362	660
	M	350	570
	M	348	450
	M	346	450
	M	323	420
	—	470	1500
	—	322	350
7	M	510	

15. Data on Oxygen, Phosphate, Silicate and Hydrogen-Ion Concentration

(酸素，燐酸塩，硅酸塩，水素イオン濃度測定記録)

Hydrogen-ion concentration, dissolved oxygen, phosphate and silicate was measured by M. Oguro aboard the ship immediately after sampling.

Table 11. Data on oxygen, phosphate, silicate, hydrogen-ion concentration in 1958 cruise 42 to the Bering Sea

Station Os 1 (Os 25-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate -P (μg-at./L)	Silicate-Si (μg-at./L)
0	8.2	6.91	96	1.61	4.2
10	8.2	7.09	97	1.71	4.6
21	8.1	7.08	97	1.78	5.4
31	8.1	7.19	99	1.72	5.9
52	8.1	7.25	100	1.95	8.5
71	8.05	5.35	73	2.29	23.8
94	8.0	3.78	51	2.84	27.7
115	7.95	2.76	37	2.90	39
138	7.9	1.80	25	2.96	47
177	7.85	1.43	20	3.34	48
217	7.8	0.83	11	3.41	51
258	7.8	1.81	25	3.56	56
338	7.75	0.81	11	3.56	73
434	7.75	0.65	9	3.57	76
506	7.75	0.75	10	3.49	79
651	7.75	0.80	11	3.56	86
796	7.8	0.61	8	3.62	83
941	7.85	0.58	8	3.63	90
1157	7.9	0.91	12	3.63	128

Station Os 2 (Os 26-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate -P (μg-at./L)	Silicate-Si (μg-at./L)
0	8.2	6.60	92	1.71	11
10	8.2	6.61	91	1.76	10
20	8.2	6.68	92	1.80	11
29	8.2	6.69	93	1.82	14
48	8.2	6.39	88	2.35	18
74	8.15	6.00	82	2.39	20
99	8.15	5.79	79	3.41	27
123	8.1	6.10	83	2.35	25
148	8.1	4.60	63	2.77	31
184	8.05	3.71	51	2.92	37
226	8.0	2.87	39	2.96	45
272	7.95	2.65	36	3.28	56
359	7.9	1.59	22	3.22	69
496	7.8	1.36	18	3.30	76
574	7.8	1.08	15	3.34	81
730	7.8	0.80	11	3.34	90
905	7.85	0.88	12	3.36	95
1101	7.9	0.77	10	3.28	116
1396	7.9	0.93	12	3.15	126

Station Os 3 (Os 27-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate -P (μg-at./L)	Silicate-Si (μg at./L)
0	8.25	7.39	100	1.29	23
10	8.2	7.36	100	2.16	25
19	8.15	7.40	100	1.50	26
28	8.2	7.47	101	1.19	31
47	8.2	7.41	99	1.35	30
73	8.2	7.26	96	1.40	29
96	8.15	7.22	96	1.50	30
118	8.1	7.07	94	1.71	33
135	8.1	5.40	72	1.55	35
214	7.85	2.40	33	1.23	50
258	7.8	1.20	16	1.97	51
302	7.8	1.61	22	1.29	54
404	7.75	1.06	14	1.44	67
546	7.7	0.97	13	1.82	69
627	7.7	0.68	9	1.88	73
789	7.75	0.58	8	2.01	99
968	7.8	0.61	8	2.12	113
1146	7.9	0.61	8	2.88	115
1428	7.95	0.74	10	3.01	119

Station Os 4 (Os 28-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate -P (μg-at./L)	Silicate-Si (μg-at./L)
0	8.2	7.67	109	2.52	23
10	8.2	7.45	101	2.54	27
20	8.2	7.66	104	2.46	26
30	8.2	7.57	101	2.12	25
51	8.2	7.46	98	2.16	26
67	8.2	7.37	96	1.19	29
89	8.2	7.39	97	1.82	29
112	8.15	7.21	93	1.78	30
134	8.1	6.95	91	2.54	26
194	8.1	6.42	84	2.58	28
244	7.95	3.53	47	2.65	44
296	7.8	2.72	37	3.22	52
398	7.8	1.63	22	3.34	61
469	7.7	1.25	17	3.41	62
563	7.75	0.90	12	3.43	73
750	7.7	0.63	9	3.56	81
951	7.85	0.59	8	3.66	95

Station Os 5 (Os 29-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate -P (μg-at./L)	Silicate-Si (μg at./L)
0	8.2	7.56	104	2.35	29
9	8.2	7.55	102	1.95	33
18	8.2	7.54	101	2.01	28
26	8.15	7.57	103	0.97	34
44	8.1	7.36	97	2.35	34
73	8.1	7.23	95	2.29	31
95	8.1	7.31	96	2.35	34
119	8.1	7.01	92	1.78	35
143	8.1	6.76	88	2.35	35
201	8.0	4.19		2.41	50
463	7.7	2.37		3.03	77

Station Os 6 (Os 30-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate -P (μg at./L)	Silicate Si (μg-at./L)
0	8.3	7.60	103	2.14	34
9	8.3	7.63	103	1.86	29
18	8.2	7.72	105	1.58	25
27	8.2	7.72	102	1.72	29
44	8.15	7.49	98	1.66	29
74	8.1	7.41	96	1.86	30
96	8.15	7.37	95	2.00	31
117	8.1	6.97	90	1.44	32
139	8.1	6.76	87	1.52	41
232	8.0	4.99	66	1.86	45
272	7.95	3.38	45	1.86	46
310	7.9	2.84	39	1.89	52
398	7.8	1.86	25	1.94	71
597	7.7	0.88	12	2.14	85
673	7.65	0.70	10	1.72	95
826	7.6	0.67	9	1.86	97
951	7.6	0.55	7	1.83	103
1235	7.8	0.65	9	1.86	126
1536	7.9	0.59	8	2.00	128

Station Os 7 (Os 31-IGY)

Depht (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate P (μg-at./L)	Silicate-Si (μg-at./L)
0	8.35	8.64	113	1.35	1.5
10	8.35	8.69	108	0.60	2.6
20	8.3	8.86	111	0.98	3.3
30	8.2	8.14	103	1.47	25
50	8.1	7.50	95	1.65	39
70	8.1	7.40	94	2.00	36

Station Os 8 (Os 32-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate -P (μg-at./L)	Silicate Si (μg-at./L)
0	8.3	7.89	107	1.71	24
10	8.25	7.95	107	1.73	26
20	8.2	7.82	105	1.83	26
30	8.2	7.66	103	1.94	29
50	8.15	7.46	97	1.98	30
75	8.1	7.27	93	2.27	33
100	8.1	7.29	94	2.29	36

Station Os 9 (Os 33-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate P (μg-at./L)	Silicate-Si (μg-at./L)
0	8.2	7.33	101	1.61	29
10	8.2	7.32	101	1.95	25
19	8.2	7.42	102	2.01	24
29	8.15	7.42	101	2.03	25
48	8.1	7.08	95	2.03	28
73	8.1	6.83	90	2.16	31
97	8.1	6.58	87	2.05	33
122	8.1	6.60	87	2.22	37
205	8.0	4.97	66	2.29	41
253	7.95	3.26	44	2.29	52
299	7.9	2.90	39	2.31	57
397	7.8	1.99	27	2.35	62
473	7.8	1.32	18	2.37	77

Station Os 10 (Os 34-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate -P (μg-at./L)	Silicate-Si (μg at./L)
0	8.2	7.37	104	2.01	18
10	8.2	7.35	102	1.64	19
20	8.15	7.06	98	0.82	17
31	8.1	7.16	99	1.00	22
52	8.1	7.15	99	1.82	21
70	8.1	6.98	95	0.54	18
93	8.05	6.81	91	1.00	27
117	8.0	6.74	90	1.00	23
139	8.0	6.69	89	1.41	23
192	8.0	6.46		1.55	30
492	7.7	1.22		2.01	57

Station Os 11 (Os 35-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate -P (μg-at./L)	Silicate-Si (μg-at./L)
0	8.2	7.27	104	1.61	36
9	8.2	7.33	103	1.82	40
17	8.15	7.32	102	1.95	39
26	8.1	7.30	101	2.16	42
43	8.1	7.75	106	2.41	42
76	8.1	7.20	95	2.42	44
101	8.1	7.20	95	2.43	45
127	8.1	6.99	92	2.24	37
152	8.05	6.92	91	2.33	39
197	8.0	4.10	55	2.79	59
247	7.95	2.82	38	3.21	47
296	7.9	2.13	29	3.09	64
395	7.8	1.42	19	3.15	85
495	7.75	0.99	13	3.28	66

Data at **Station Os 12 (Os 36-IGY)** 1958 were not presented,

Station Os 13 (Os 37-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate -P (μg-at./L)	Silicate-Si (μg-at./L)
0	8.35	8.11	117	1.29	6.5
10	8.3	8.24	119	1.40	7.0
20	8.25	7.46	115	1.54	2.5
29	8.2	7.36	114	1.50	4.2
48	8.2	5.51	76	2.29	28
72	8.1	5.15	71	2.31	32
96	8.05	4.92	68	2.41	36
120	8.0	4.83	66	2.43	38
144	8.0	4.75	65	2.52	39
204	8.0	5.11	69	2.22	40
251	7.95	4.31	58	2.43	52
297	7.9	3.95	54	2.75	53
392	7.9	1.89	27	2.90	59
516	7.7	0.68	9	3.09	68
596	7.65	0.70	10	3.49	77
767	7.6	0.44	6	3.55	82
962	7.9	0.49	7	3.09	105
1156	7.85	0.61	8	3.39	120
1445	7.8	0.78	10	3.76	131

Station Os 14 (Os 38-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate -P (μg-at./L)	Silicate-Si (μg-at./L)
0	8.25	7.04	100	1.82	10
10	8.2	6.95	98	1.50	4.1
20	8.2	7.12	100	1.56	6.3
30	8.15	7.18	100	1.61	7.7
49	8.1	7.25	100	1.66	9.2
74	8.1	7.17	97	1.79	17
99	8.05	7.06	94	2.07	18
123	8.0	6.31	85	2.13	25
148	8.0	4.12	55	2.16	36
206	7.9	2.90	39	2.75	46
251	7.85	5.09	68	2.96	50
296	7.8	1.73	23	3.12	52
388	7.8	1.40	19	3.22	62
544	7.8	1.12	15	2.29	81
624	7.8	0.77	10	2.65	84
789	7.75	0.76	10	2.95	85
972	7.8	0.82	11	3.15	95
1160	7.85	0.85	11	2.90	98
1434	7.9	1.26	17	2.58	109

Station Os 15 (Os 39-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate-P (μg at./L)	Silicate-Si (μg-at./L)
0	8.25	7.11	100	1.61	5.8
15	8.2	7.02	99	1.29	6.5
24	8.1	7.06	100	1.50	3.9
31	8.1	7.05	99	1.34	3.9
48	8.2	7.13	99	1.24	3.5
69	8.1	7.13	97	1.71	14
87	8.1	6.74	90	1.82	15
104	8.05	4.51	61	2.29	22
121	8.0	2.72	37	2.77	35
200	7.9	2.05	28	2.84	41
230	7.9	1.00	14	3.15	52
260	7.8	0.79	11	3.41	55
333	7.8	0.60	8	2.92	57

Station Os 16 (Os 40-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate-P (μg-at./L)	Silicate-Si (μg-at./L)
0	8.3	7.29	103	1.88	5.9
10	8.3	7.13	100	1.66	7.8
20	8.3	7.19	101	1.71	4.0
30	8.25	7.22	101	1.63	7.8
49	8.2	7.38	102	1.61	9.1
76	8.2	7.08	95	1.77	10
101	8.2	6.10	81	2.29	25
127	8.1	2.98	40	2.77	45
152	7.9	1.77	23	3.03	25
204	7.7	1.04	14	3.09	17
250	7.6	0.91	12	3.56	27
297	7.65	0.77	10	3.38	25
390	7.65	0.76	10	3.03	26
519	7.65	0.59	8	3.28	37
613	7.7	0.50	7	3.41	46
800	7.7	0.53	7	3.49	88

Station Os 17 (Os 41-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate-P (μg at./L)	Silicate Si (g-at./L)
0	8.2	7.26	104	2.11	13
10	8.2	7.20	102	1.50	15
20	8.2	7.28	103	1.77	15
30	8.15	7.32	103	1.99	13
49	8.1	7.31	103	1.88	14
77	8.1	7.08	97	2.05	15
101	8.1	6.76	91	2.07	18
125	8.05	6.17	83	2.22	20
149	8.0	4.83	66	2.29	30
199	7.9	3.32	45	2.96	42
243	7.85	2.38	32	2.43	46
286	7.8	1.62	22	2.80	52
371	7.7	1.12	15	2.77	59

Station Os 18 (Os 42-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate-P (μg-at./L)	Silicate-Si (μg at./L)
0	8.2	7.26	103	1.77	
10	8.2	7.19	101	1.61	
19	8.2	7.20	101	1.76	
28	8.2	7.30	102	1.50	
48	8.15	6.92	94	1.57	
80	8.1	6.91	93	1.57	
105	8.1	5.95	81	2.35	
129	8.0	5.56	75	2.77	
154	8.0	5.77	77	2.29	
213	7.95	3.66	50	3.28	
257	7.85	2.57	35	2.46	
300	7.8	1.98	27	2.52	
456	7.8	0.94	13	2.58	
540	7.8	0.84	11	3.09	
624	7.7	0.72	10	3.28	
793	7.75	0.66	9	3.83	
979	7.8	0.57	8	3.03	
1155	7.8	0.57	8	4.11	
1442	7.9	0.74	10	3.96	

Station Os 19 (Os 43-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate -P (μg-at./L)	Silicate-Si (μg-at./L)
0	8.2	7.18	103	1.82	10
10	8.15	7.09	100	1.72	11
20	8.15	7.19	102	2.05	11
30	8.2	7.62	105	1.95	12
50	8.15	7.36	100	1.99	13
75	8.15	6.87	92	2.16	18
100	8.1	6.45	86	2.29	19
125	8.1	5.53	74	2.47	28
150	8.05	4.53	62	2.84	32
198	7.95	2.74	37	3.09	42
248	7.8	1.82	25	3.28	46
297	7.75	1.24	17	3.30	54
491	7.75	0.71	10	3.41	74
589	7.7	0.61	8	3.53	77
784	7.7	0.65	9	3.58	80
952	7.8	0.60	8	3.15	93
1091	7.85	0.76	10	3.62	95
1420	7.9	0.78	10	3.55	105

Station Os 20 (Os 44-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate P (μg-at./L)	Silicate-Si (μg-at./L)
0	8.2	7.35	105	1.75	31
9	8.2	7.41	104	1.80	28
18	8.15	7.49	104	1.82	29
27	8.15	7.60	105	1.75	30
44	8.1	7.75	102	1.90	32
68	8.1	7.46	98	1.94	23
90	8.1	7.43	98	1.96	32
113	8.05	7.03	91	2.09	33
135	8.0	6.18	81	2.20	38
197	7.9	2.45	33	2.54	50
246	7.8	1.70	23	2.63	55
295	7.7	1.17	16	2.90	64
343	7.7	1.05	14	2.71	69
476	7.7	0.81	12	2.88	70
571	7.75	0.73	10	2.93	85
764	7.7	0.66	9	3.05	97
959	7.85	0.66	9	2.93	103
1165	7.85	0.69	9	2.88	108
1458	7.9	0.83	11	2.76	122

Station Os 21 (Os 45-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate P (μg-at./L)	Silicate Si (μg-at./L)
0	8.2	7.47	107	2.10	21
9	8.2	7.42	106	2.22	25
18	8.2	7.70	109	3.27	28
26	8.15	7.73	104	2.65	27
44	8.15	7.61	99	2.77	29
68	8.1	7.43	97	2.51	29
90	8.1	7.45	96	2.16	34
112	8.1	7.31	94	2.52	25
135	8.1	6.89	86	2.35	27
194	7.85	2.77	37	2.96	50
243	7.8	2.06	28	3.62	59
292	7.65	1.49	20	3.68	64
387	7.6	0.81	11	3.34	65
508	7.6	0.74	10	3.45	73
600	7.6	0.68	9	3.53	80
783	7.65	0.67	9	3.77	98
974	7.8	0.67	9	2.90	100
1168	7.85	0.69	9	3.49	103
1456	7.85	0.75	10	3.62	105

Station Os 22 (Os 46-IGY)

Depth (m)	pH	O_2 (ml/L)	Sat.O_2 (%)	Phosphate -P (μg at./L)	Silicate-Si (μg-at./L)
0	8.3	7.53	110	1.77	16
9	8.3	7.50	110	1.82	18
18	8.25	8.20	110	2.05	20
27	8.2	7.94	105	2.07	22
45	8.2	7.48	98	2.26	28
66	8.1	7.44	97	2.47	29
88	8.1	7.31	94	2.54	29
110	8.05	7.21	92	2.71	30
132	8.05	7.20	92	2.52	30
214	8.0	6.96	88	2.77	33
233	8.0	5.46	71	2.84	40
282	7.95	3.15	42	2.77	51
377	7.95	1.92	26	2.92	61
558	7.75	1.09	15	3.28	80
636	7.7	0.81	11	3.03	84
790	7.65	0.53	7	3.41	86
972	7.75	0.56	8	2.84	92
1155	7.8	0.58	8	3.41	107
1431	7.85	0.71	9	3.09	120

16. Data on Water Temperature recorded by BT
（BTによる水温記録）

Measurements and calculation on water temperature by BT were made by N. Inoue and S. Nishizawa.

Abbreviation

Wx : Present weather

Table 12. Data on water temperature recorded by BT in 1958 cruise 42 to the Bering Sea

(I) Temperature at standard depth

Serial No.	Date	Time GMT		Ship's time		Ship's speed	Latitude	Longitude	Temperature °C at indicated depth									Surface layer depth (m)	Max. temp. °C
	Day Mo. Yr.	h	m	h	m	KT	° ′ N S	° ′ E W	0	10	20	30	50	75	100	150	200		
Os 58,25	3 Jun. 1958	00	00	11	00	0	48°56′ N	177°02′ E	3.8	3.9	3.9	4.0	3.8	3.2	2.9	3.1	3.8	50	4.0
〃 26	6	12	00	23	00	0	48 15 N	177 58 E	4.8	4.3	4.3	4.4	4.4	3.8	3.3	3.1	3.0	66	4.8
〃 27	6	18	00	06	00	0	48 52 N	178 30 E	4.3	4.3	4.2	4.2	4.2	3.6	2.8	3.1	3.1	68	4.3
〃 28	7	00	00	12	00	0	49 22 N	179 08 E	4.6	4.1	4.1	4.1	4.1	3.9	3.2	3.1	—	69	4.6
〃 29	7	06	30	18	30	0	50 01 N	179 58 W	5.0	4.9	4.9	4.9	4.7	3.4	3.7	3.7	3.7	50	5.0
〃 30	7	15	00	05	00	0	50 36 N	180 00	5.2	4.8	4.7	4.7	4.6	3.7	3.4	3.6	3.3	60	5.2
〃 31	7	20	30	08	30	0	51 14 N	180 00	5.7	5.1	4.8	4.6	4.6	4.6	4.5	4.4	4.3	20	5.7
〃 32	8	03	22	15	22	0	51 59 N	179 28 W	5.3	5.3	5.1	4.8	4.7	4.5	4.4	4.3	4.2	18	5.3
〃 33	8	12	28	00	28	0	52 40 N	180 00	5.0	4.5	4.5	4.3	4.1	3.9	3.6	3.6	3.6	20	5.0
〃 34	8	20	07	08	07	0	53 29 N	179 59 W	4.3	4.1	4.1	4.0	3.1	2.8	2.7	3.5	3.7	35	4.4
〃 35	9	03	22	15	22	0	54 20 N	180 00	4.0	4.0	4.0	4.0	3.8	3.4	3.2	3.3	3.7	42	4.0
〃 36	9	21	00	09	00	0	54 54 N	180 00	4.6	4.0	4.0	4.0	3.4	2.7	2.7	2.7	3.9	40	4.6
〃 37	10	01	05	13	05	0	55 27 N	180 00	4.4	3.7	3.7	3.7	3.3	2.8	2.7	2.3	3.5	38	4.4
〃 38	10	05	30	17	30	0	56 00 N	180 00	4.4	3.9	3.8	3.7	2.8	2.4	2.4	2.4	3.0	40	4.7
〃 39	10	21	45	09	45	0	56 40 N	180 00	4.7	4.0	4.0	3.9	3.5	2.8	2.2	2.1	3.6	42	4.7
〃 40	11	03	02	15	02	0	57 20 N	179 59 W	4.6	3.8	3.8	3.8	3.8	2.9	2.5	2.6	3.7	56	4.6
〃 41	11	09	16	21	16	0	58 00 N	180 00	4.0	4.0	4.0	4.0	3.5	2.6	2.5	2.7	3.8	40	4.0
〃 42	11	16	26	04	26	0	58 42 N	179 49 E	4.5	4.3	4.3	4.3	3.8	3.0	2.8	2.4	2.4	30	4.5
〃 43	11	22	00	10	00	0	59 20 N	180 00	4.4	3.9	3.9	3.8	2.9	2.4	2.3	2.3	2.3	30	4.4
〃 44	12	04	26	16	26	0	60 01 N	180 00	4.2	4.0	4.0	3.0	2.5	2.3	2.3	2.2	2.5	20	4.2
〃 45	12	15	08	03	08	0	60 30 N	178 45 W	4.4	3.7	3.7	3.7	3.2	2.4	2.2	2.6	2.5	40	4.4

Table 12. (I) (Continued)

Serial No.	Date	Time GMT		Ship's time		Ship's speed	Latitude	Longitude	Temperature °C at indicated depth									Surface layer depth (m)	Max. temp. °C
	Day Mo. Yr.	h	m	h	m	KT	° ′ N S	° ′ E W	0	10	20	30	50	75	100	150	200		
Os 58,46	12 Jun. 1958	21	40	09	40	0	61°01′ N	177°28′ W	3.6	3.3	3.4	2.4	2.0	2.0	2.0	—	—	26	3.6
〃 47	13	03	09	15	09	0	61 31 N	176 15 W	3.9	3.0	2.9	2.9	1.0	0.7	0.5	—	—	30	3.9
〃 48	13	09	00	21	00	0	61 58 N	174 58 W	2.9	1.9	1.6	-1.6	-1.8	-1.8	—	—	—	20	2.9
〃 49	13	14	13	02	13	0	61 20 N	175 00 W	3.6	2.9	2.4	2.4	0.6	0.4	—	—	—	12	3.6
〃 50	13	19	16	07	16	0	60 40 N	175 00 W	3.5	3.4	3.1	3.1	1.1	1.3	1.4	—	—	30	3.5
〃 51	14	00	10	12	10	0	60 00 N	175 00 W	3.9	3.9	3.4	3.4	2.7	2.0	2.0	—	—	13	3.9
〃 52	14	15	38	17	38	0	59 29 N	175 00 W	5.5	4.7	4.3	4.3	2.9	2.5	2.4	—	—	42	5.5
〃 53	14	10	45	22	45	0	58 40 N	175 00 W	5.3	4.5	4.5	4.4	3.8	3.3	3.3	3.3	3.3	42	5.3
〃 54	14	05	20	03	20	0	58 00 N	175 00 W	4.8	4.8	4.8	4.5	3.6	3.2	3.1	2.8	3.2	40	4.8
〃 55	14	21	50	09	50	0	57 19 N	174 56 W	4.6	4.5	4.4	4.0	3.0	3.0	3.0	3.0	—	25	4.6
〃 56	15	02	00	14	00	0	56 40 N	174 59 W	5.4	5.0	4.9	4.7	3.2	2.4	2.4	2.0	3.9	40	5.4
〃 57	15	08	10	19	00	0	56 01 N	175 01 W	5.7	5.7	5.3	5.0	5.0	4.0	3.7	3.2	3.0	52	5.7
〃 58	15	22	00	10	00	0	55 20 N	175 00 W	5.8	4.5	3.7	3.7	3.6	2.0	2.0	—	—	—	5.8
〃 59	16	02	25	14	25	0	54 40 N	175 00 W	6.5	5.7	4.6	4.6	4.5	3.0	3.0	3.0	3.5	12	6.5
〃 60	16	07	08	19	08	0	54 02 N	174 59 W	6.5	6.5	4.9	4.7	4.5	3.2	3.0	2.7	3.5	10	6.5
〃 61	16	21	39	09	39	0	53 20 N	175 13 W	6.5	5.5	4.9	4.7	4.5	3.7	3.5	—	—	18	6.5
〃 62	17	02	07	14	07	0	52 40 N	175 26 W	6.7	6.3	5.2	5.0	5.0	3.7	3.9	3.4	3.4	50	6.7
〃 63	17	06	05	18	05	0	52 40 N	175 26 W	6.8	6.5	5.7	5.0	4.7	3.8	3.5	3.5	3.5	15	6.8
〃 64	17	22	31	10	31	0	51 50 N	175 16 W	7.4	6.5	5.4	4.8	3.8	3.9	4.1	4.1	4.1	10	7.4
〃 65	18	01	20	13	20	0	51 29 N	175 59 W	7.1	7.1	6.1	5.6	4.6	4.6	4.6	4.4	4.1	10	7.1
〃 66	18	08	20	20	20	0	50 45 N	175 00 W	6.2	6.1	5.7	5.6	5.3	3.9	3.3	4.0	—	15	6.2
〃 67	18	14	47	02	47	0	50 01 N	175 01 W	6.0	6.0	5.9	5.5	4.9	3.7	3.2	3.6	3.5	15	6.0
〃 68	18	22	54	10	54	0	50 00 N	176 14 W	6.4	5.9	5.9	5.8	5.4	3.8	3.6	3.4	3.4	—	6.4
〃 69	19	03	43	15	43	0	50 00 N	177 30 W	6.1	5.9	5.5	4.8	3.2	3.9	3.4	3.6	3.6	44	6.1
〃 70	21	18	25	05	25	0	50 00 N	177 27 E	5.9	5.9	6.0	6.1	5.4	3.8	3.7	4.2	4.2	40	6.1
〃 71	22	01	55	12	55	0	50 00 N	176 16 E	5.8	5.5	5.5	5.4	4.4	3.8	3.4	3.9	3.9	28	5.8
〃 72	22	08	18	19	18	0	50 00 N	175 00 E	6.0	5.7	5.7	5.6	5.2	3.7	3.3	3.9	3.9	43	6.0

Table 12. (I) (Continued)

Serial No.	Date	Time GMT		Ship's time		Ship's speed	Latitude	Longitude	Temperature °C at indicated depth									Surface layer depth (m)	Max. temp. °C
	Day Mo. Yr.	h	m	h	m	KT	° ′ N S	° ′ E W	0	10	20	30	50	75	100	150	200		
Os 58,73	22 Jun. 1958	15	59	02	39	0	50°40′ N	175°00′ E	6.5	5.9	5.9	5.9	4.7	4.0	3.3	3.9	3.9	40	6.5
〃 74	22	21	18	08	18	0	51 21 N	175 00 E	6.5	5.5	5.5	5.4	4.5	4.3	4.2	3.9	3.9	30	6.5
〃 75	23	01	13	12	13	0	52 02 N	175 00 E	5.9	5.9	5.9	5.7	4.6	4.4	3.7	3.7	3.9	22	5.9
〃 76	23	06	37	18	37	0	52 32 N	175 03 E	6.0	5.5	5.5	5.3	5.0	4.5	3.9	3.8	3.9	22	6.0
〃 77	23	10	59	21	29	0	53 00 N	175 02 E	5.5	5.5	5.5	5.5	4.1	3.7	3.7	3.4	3.9	32	5.5
〃 78	24	00	22	11	22	0	53 01 N	173 25 E	6.2	5.7	5.7	5.6	4.2	4.0	4.1	3.7	3.7	28	6.2
〃 79	24	08	05	19	05	0	53 15 N	173 44 E	6.2	5.8	5.8	5.6	4.1	3.6	2.9	3.0	—	28	6.2
〃 80	24	20	03	09	03	0	53 39 N	174 25 E	6.4	6.1	5.7	4.7	3.9	3.4	3.4	3.9	3.9	15	6.4
〃 81	25	00	48	11	48	0	53 59 N	175 04 E	5.9	5.9	5.9	5.9	4.1	3.6	3.6	3.7	4.1	32	5.9
〃 82	25	17	20	04	20	0	54 37 N	175 00 E	6.1	5.9	5.6	5.6	4.1	3.4	2.9	3.4	3.9	40	6.1
〃 83	25	22	28	09	28	0	55 21 N	175 05 E	6.4	4.2	3.5	3.4	1.8	1.2	0.9	1.9	—	15	6.4
〃 84	26	03	20	14	20	0	56 05 N	174 58 E	5.7	5.7	5.1	4.9	3.4	2.8	2.6	2.4	3.9	10	5.7
〃 85	26	10	00	21	00	0	56 39 N	175 05 E	6.4	5.6	5.2	5.1	3.6	2.7	2.6	2.4	3.7	40	6.4
〃 86	26	14	20	01	20	0	57 21 N	175 00 E	6.2	5.9	5.5	3.4	2.5	2.8	2.0	1.8	1.9	26	6.2
〃 87	26	18	41	05	41	0	58 01 N	175 00 E	6.7	6.5	5.9	4.0	2.7	2.9	2.1	1.6	3.8	12	6.7
〃 88	27	00	00	11	00	0	58 30 N	174 56 E	7.5	6.7	6.5	3.5	2.8	2.3	2.3	2.0	2.5	20	7.5
〃 89	27	04	47	15	47	0	59 20 N	175 02 E	6.7	6.8	6.8	3.5	2.0	1.6	1.8	1.8	2.1	22	6.8
〃 90	27	09	08	20	08	0	60 00 N	175 00 E	7.0	7.0	7.0	2.5	1.8	1.7	1.5	1.0	0.8	22	7.0
〃 91	27	18	00	05	00	0	59 18 N	174 08 E	6.9	6.8	7.2	3.3	2.5	2.2	1.8	1.7	2.9	22	7.2
〃 92	28	00	00	11	00	0	58 34 N	173 18 E	6.2	6.0	6.0	4.0	2.8	2.6	2.5	1.2	1.3	25	6.2
〃 93	28	05	00	16	00	0	58 00 N	172 47 E	5.8	5.6	5.7	3.0	3.0	2.0	2.0	2.0	3.0	25	5.8
〃 94	28	13	37	00	37	0	57 00 N	171 12 E	5.8	5.5	5.5	5.5	2.9	2.3	1.9	1.6	3.7	30	5.8
〃 95	28	21	05	08	05	0	55 58 N	170 18 E	6.4	3.8	3.8	1.8	0.8	0.1	-0.2	-0.3	1.8	20	6.4
〃 96	29	03	06	14	06	0	55 00 N	170 03 E	6.5	6.0	6.0	6.0	2.4	1.4	1.0	2.5	3.8	30	6.5
〃 97	29	09	10	21	10	0	54 00 N	169 40 E	6.0	6.2	6.2	5.0	3.4	3.2	3.2	3.8	4.0	28	6.2

Table 12. (II) Log sheet for BT observations

Serial No.	Date	Time GMT	Ship's speed	Latitude Longitude	Temperature °C			Wx Sea	Wind	Cloud	Temperatur correction		Depth correction	
	Day Mo. Yr.	h m	KT	° ′N S ° ′E W	Surface water	Air	Dew point		Dir. BF.	N.H.M.L.	Slide ±	Slide photo	Slide ±	Slide photo
Os 58, 25	3 Jun. 1958	00 00	0	48°56′ N 177°02′ E	3.8	4.8	4.8	61 5	08 5	8 × 2 ×	-0.6		0	
26	6	12 00	0	48 15 N 177 58 E	4.8	5.0	4.4	02 4	31 4	8 × × 6	-0.5		0	
27	6	18 00	0	48 52 N 178 30 E	4.3	4.8	4.5	02 4	31 4	8 × × 6	-0.4		0	
28	7	00 00	0	49 22 N 179 08 E	4.6	7.6	6.3	01 4	31 4	7 × × 6	-0.4		0	
29	7	06 30	0	50 01 N 179 58 E	5.6	7.4	6.2	02 4	34 4	8 × × 6	-0.3		0	
30	7	15 00	0	50 36 N 180 00	5.5	5.2	4.4	02 3	01 4	8 0 0 5	-0.3		0	
31	7	20 30	0	51 14 N 180 00	5.7	4.8	4.5	01 5	36 5	6 × 1 5	-0.2		0	
32	8	03 22	0	51 59 N 179 28 W	5.2	5.4	5.0	02 3	36 3	7 × × 1	-0.2		0	
33	8	12 28	0	52 40 N 180 00	5.0	4.3	3.5	02 4	34 4	8 × × ×	-0.2		0	
34	8	20 07	0	53 29 N 179 59 W	5.1	4.6	3.5	02 5	31 5	8 × 2 7	-0.2		0	
35	9	03 22	0	54 20 N 180 00	4.6	4.2	3.2	02 4	31 4	8 × × 6	-0.1		0	
36	9	21 00	0	54 54 N 180 00	4.6	4.3	3.5	03 3	01 3	8 0 × 5	-0.1		0	
37	10	01 05	0	55 27 N 180 00	4.4	4.7	4.2	02 3	02 3	8 0 0 5	-0.1		0	
38	10	05 30	0	56 00 N 180 00	4.5	3.8	3.4	02 2	34 2	8 0 0 5	-0.1		0	
39	10	21 45	0	56 40 N 180 00	4.5	4.0	3.5	02 4	36 4	8 0 0 6	-0.1		0	
40	11	03 02	0	57 20 N 179 59 W	4.6	4.4	3.7	03 4	03 5	8 × × 6	0.0		0	
41	11	09 16	0	58 00 N 180 00	4.5	3.4	3.4	02 5	03 5	8 0 0 6	0.0		0	
42	11	16 26	0	59 42 N 179 49 E	4.5	3.3	2.8	02 4	04 4	8 0 0 6	0.0		0	
43	11	22 00	0	60 20 N 180 00	4.6	2.6	2.3	01 5	02 5	7 × × 6	0.0		0	
44	12	04 26	0	60 01 N 180 00	4.2	3.6	3.0	02 6	02 6	8 × × 6	0.0		0	
45	12	15 08	0	61 30 N 178 45 W	4.4	3.8	3.4	01 3	36 4	6 0 5 4	0.0		0	
46	12	21 40	0	61 01 N 177 28 W	3.7	4.2	3.8	02 2	36 3	7 0 2 5	0.0		0	
47	13	03 09	0	61 31 N 176 15 W	3.8	6.5	5.2	01 2	31 3	6 0 3 5	-0.1		0	
48	13	09 00	0	61 58 N 174 58 W	3.0	2.9	2.7	47 1	04 2	9 × × ×	-0.1		0	
49	13	14 13	0	61 20 N 175 00 W	3.6	3.3	3.0	02 1	03 1	8 × × 6	-0.1		0	
50	13	19 16	0	60 40 N 175 00 W	3.9	3.0	2.7	46 0	00 0	8 0 2 0	-0.1		0	

Table 12. (II) (Continued)

Serial No.	Date	Time GMT	Ship's speed	Latitude	Longitude	Temperature °C			Wx	Sea	Wind		Cloud	Temperatur correction		Depth correction	
	Day Mo. Yr.	h m	KT	° ′ N S	° ′ E W	Surface water	Air	Dew point			Dir.	BF.	N.H.M.L.	Slide ±	Slide photo	Slide ±	Slide photo
Os 58,51	14 Jun. 1958	00 10	0	60°00′ N	175°00′ W	4.6	3.6	3.4	02	1	25	2	8 0 0 6		-0.1		0
52	14	05 38	0	59 20 N	175 00 W	5.5	4.4	4.0	02	1	27	1	8 × 2 7		-0.2		0
53	14	10 45	0	58 40 N	175 00 W	5.6	4.6	4.3	61	2	27	2	8 × 2 7		-0.2		0
54	14	15 20	0	58 00 N	175 00 W	4.8	4.7	4.0	02	3	27	3	8 × × 6		-0.2		0
55	14	21 50	0	57 19 N	174 56 W	4.8	4.2	3.2	02	3	25	3	8 0 0 6		-0.3		0
56	15	02 00	0	56 40 N	174 59 W	5.4	4.3	3.3	41	3	25	3	7 0 0 6		-0.3		0
57	15	08 10	0	56 01 N	175 01 W	5.8	4.6	4.2	03	2	23	3	8 × × 6		-0.3		0
58	15	22 00	0	55 20 N	175 00 W	5.2	5.0	4.6	21	2	22	2	8 0 0 6		-0.3		0
59	16	02 25	0	54 40 N	175 00 W	6.5	6.9	—	01	1	18	1	7 0 6 8		-0.3		0
60	16	07 08	0	54 02 N	174 59 W	6.8	6.1	3.8	02	1	18	1	7 0 0 6		-0.3		0
61	16	21 39	0	53 20 N	175 13 W	6.5	6.0	5.5	20	2	13	3	8 0 2 7		-0.3		0
62	17	02 07	0	52 40 N	175 26 W	6.2	6.8	5.5	02	2	14	2	8 0 2 8		-0.3		0
63	17	06 05	0	52 40 N	175 26 W	6.8	6.6	6.2	01	1	09	1	7 0 1 5		-0.3		0
64	17	22 31	0	51 50 N	175 16 W	5.7	8.6	5.9	01	1	07	1	7 0 0 5		-0.2		0
65	18	01 20	0	51 29 N	175 59 W	7.2	9.2	6.8	02	2	07	2	7 0 0 5		-0.2		0
66	18	08 20	0	50 45 N	175 00 W	6.7	7.2	4.8	01	3	05	4	6 1 5 5		-0.1		0
67	18	14 47	0	50 01 N	175 01 W	6.4	5.8	4.5	03	3	05	3	8 0 5 1		-0.1		0
68	18	22 54	0	50 00 N	176 14 W	6.0	6.2	5.2	01	4	36	5	6 × 6 4		-0.1		0
69	19	03 43	0	50 00 N	177 30 W	6.8	5.6	5.3	01	4	34	5	7 × 3 1		-0.1		0
70	21	18 25	0	50 00 N	177 27 E	6.8	5.4	4.5	02	4	31	4	8 × × 6		-0.1		0
71	22	01 55	0	50 00 N	176 16 E	5.9	5.7	4.8	01	4	30	4	7 0 0 6		-0.1		0
72	22	08 18	0	50 00 N	175 00 E	6.1	5.8	3.5	02	3	29	4	8 0 0 6		-0.1		0
73	22	15 39	0	50 40 N	175 00 E	6.3	5.8	4.8	02	3	27	3	8 0 0 6		-0.1		0
74	22	21 18	0	51 21 N	175 00 E	6.5	7.2	6.0	01	4	25	3	8 × × 6		-0.1		0
75	23	01 13	0	52 02 N	175 00 E	6.3	8.2	6.3	02	4	25	4	8 × × 6		-0.1		0
76	23	06 37	0	52 32 N	175 03 E	6.0	6.4	5.9	02	4	23	4	8 0 0 6		-0.1		0

Table 12. (II) (Continued)

Serial No.	Date	Time GMT	Ship's speed	Latitude Longitude	Temperature °C			Wx Sea	Wind	Cloud	Temperatur correction	Depth correction
	Day Mo. Yr.	h m	KT	° ′N S ° ′E W	Surface water	Air	Dew point		Dir. BF.	N.H.M.L.	Slide ±	Slide photo	Slide ±	Slide photo
Os 58,77	23 Jun. 1958	10 59	0	53°00′N 175°02′E	6.0	5.8	5.5	21 4	20 4	8 × × ×	−0.1	0
78	24	00 22	0	53 01 N 173 25 E	6.8	7.4	5.3	03 3	20 4	6 8 1 4	−0.1	0
79	24	08 05	0	53 15 N 173 44 E	6.5	6.6	5.8	01 2	35 2	6 0 1 4	−0.1	0
80	24	20 03	0	53 39 N 174 25 E	6.4	6.8	5.5	02 2	32 2	8 × × 6	−0.1	0
81	25	00 48	0	53 59 N 175 04 E	6.4	7.1	2.9	02 2	33 3	8 × 2 4	−0.1	0
82	25	17 20	0	54 37 N 175 00 E	6.1	5.1	4.7	02 1	27 1	8 0 0 6	−0.1	0
83	25	22 28	0	55 21 N 175 05 E	6.2	6.2	5.6	02 1	23 1	8 0 0 5	−0.1	0
84	26	03 20	0	56 05 N 174 58 E	6.7	6.6	5.2	02 1	21 1	8 × 2 8	−0.1	0
85	26	10 00	0	56 39 N 175 05 E	6.6	6.4	4.2	02 1	18 1	8 0 0 5	−0.1	0
86	26	14 20	0	57 21 N 175 00 E	6.7	6.3	4.2	02 2	15 2	8 0 0 5	−0.1	0
87	26	18 41	0	58 01 N 175 00 E	6.6	6.4	5.3	02 3	13 3	8 × × 6	0.0	0
88	27	00 00	0	58 30 N 174 56 E	7.5	7.0	6.1	03 4	11 4	8 × 2 7	0.0	0
89	27	04 47	0	59 20 N 175 02 E	7.6	6.8	5.9	03 4	09 4	8 × 4 6	0.0	0
90	27	09 08	0	60 00 N 175 00 E	7.8	7.0	6.2	03 4	08 4	8 × × 5	0.0	0
91	27	18 00	0	59 18 N 174 08 E	7.6	7.0	5.8	51 5	07 5	8 0 2 0	0.0	0
92	28	00 00	0	58 34 N 173 18 E	6.2	6.8	6.8	63 6	08 6	8 0 2 0	0.0	0
93	28	05 00	0	58 00 N 172 47 E	6.1	6.2	5.9	51 5	07 5	8 0 2 0	0.0	0
94	28	13 37	0	57 00 N 171 12 E	5.8	5.9	5.6	51 5	05 5	8 0 0 7	0.0	0
95	28	21 05	0	55 58 N 170 18 E	6.4	6.6	6.2	02 5	03 5	8 0 0 6	0.0	0
96	29	03 06	0	55 00 N 170 03 E	6.5	7.1	5.9	02 4	34 5	8 × × 6	0.0	0
97	29	09 10	0	54 00 N 169 40 E	6.3	6.0	5.2	02 4	32 5	8 0 0 6	0.0	0

17. Data on Currents measured by G.E.K.
（ＧＥＫによる測流記録）

Measurments on current by G.E.K. were made by the officers of the Oshoro Maru and the calculations were made by S. Nishizawa.

Table 13. Data on currents measured by G.E.K. in 1958 cruise 42 to the Bering Sea

Serial No.	Greenwich mean time		Latitude		Longitude		Depth	Current	
	Day	Time h m	′	N S	′	E W	(m)	Dir.	Speed KT
Os 58-01	May 28	00 20	46° 26′	N	149° 52′	E	0	133	0.4
Os 58-02	〃 28	05 40	42 40	N	151 01	E	0	165	0.2
Os 58-03	〃 28	12 09	42 54	N	152 12	E	0	255	0.2
Os 58-04	〃 28	17 40	43 04	N	153 18	E	0	41	1.0
Os 58-05	〃 29	00 06	43 23	N	154 36	E	0	85	1.1
Os 58-06	〃 29	05 35	43 31	N	155 38	E	0	91	0.6
Os 58-07	〃 29	12 07	43 46	N	156 51	E	0	128	0.4
Os 58-08	〃 29	17 35	43 58	N	157 58	E	0	75	0.4
Os 58-09	〃 30	00 07	44 14	N	159 14	E	0	165	0.3
Os 58-10	〃 30	05 44	44 28	N	160 13	E	0	317	0.4
Os 58-11	〃 30	12 08	44 48	N	161 26	E	0	70	0.4
Os 58-12	〃 31	18 18	45 03	N	162 23	E	0	150	0.3
Os 58-13	〃 31	00 08	45 17	N	163 19	E	0	12	0.4
Os 58-14	〃 31	05 05	45 33	N	164 29	E	0	82	0.4
Os 58-15	〃 31	12 12	45 51	N	165 34	E	0	135	0.2
Os 58-16	〃 31	17 50	46 08	N	166 41	E	0	92	0.4
Os 58-17	June 1	00 08	46 27	N	167 54	E	0	160	0.3
Os 58-18	〃 1	05 44	46 36	N	169 01	E	0	100	0.3
Os 58-19	〃 1	12 05	46 57	N	170 11	E	0	308	0.4
Os 58-20	〃 1	17 55	47 18	N	171 16	E	0	350	0.3
Os 58-21	〃 2	00 05	47 42	N	172 32	E	0	137	0.3
Os 58-22	〃 2	05 45	47 56	N	173 42	E	0	212	0.3
Os 58-23	〃 2	12 08	48 17	N	174 50	E	0	335	0.3
Os 58-24	〃 2	17 50	48 40	N	176 07	E	0	335	0.4
Os 58-25	〃 3	00 08	48 56	N	177 02	E	0	13	0.5
Os 58-26	〃 6	12 08	48 15	N	177 58	E	0	312	0.4
Os 58-27	〃 6	18 00	48 52	N	178 30	E	0	300	0.1
Os 58-28	〃 7	00 08	49 22	N	179 08	E	0	42	0.4
Os 58-29	〃 7	06 23	50 01	N	179 58	E	0	199	0.2
Os 58-30	〃 7	15 17	50 36	N	180 00		0	72	0.2
Os 58-31	〃 7	20 33	51 14	N	180 00		0	198	0.2
Os 85-32	〃 8	03 31	52 00	N	179 28	W	0	225	0.2
Os 58-33	〃 8	12 50	52 40	N	180 00		0	64	0.2
Os 58-34	〃 8	20 13	53 28	N	179 59	W	0	91	0.7
Os 58-35	〃 9	03 38	54 20	N	180 00		0	203	0.1

Table 13. (Continued)

Serial No.	Greenwich mean time		Latitude		Longitude		Depth	Current	
	Day	Time h m	′ N S		′ E W		(m)	Dir.	Speed KT
Os 58-36	June 9	21 08	54 54	N	180 00		0	297	0.4
Os 58-37	〃 10	01 20	55 27	N	180 00		0	315	0.1
Os 58-38	〃 10	05 22	56 00	N	180 00		0	135	0.3
Os 58-39	〃 10	22 00	56 40	N	180 00		0	38	0.4
Os 58-40	〃 11	03 24	57° 20′	N	180° 00′		0	253	0.2
Os 58-41	〃 11	09 02	58 00	N	180 00		0	270	0.1
Os 58-42	〃 11	16 53	58 42	N	179 49	E	0	171	0.4
Os 58-43	〃 11	22 02	59 20	N	180 00		0	232	0.4
Os 58-44	〃 12	04 42	60 01	N	180 00		0	0	0.1
Os 58-45	〃 12	13 29	60 30	N	178 45	E	0	140	0.1
Os 58-46	〃 12	22 00	61 01	N	177 28	W	0	256	0.3
Os 58-47	〃 13	04 42	61 38	N	176 04	W	0	65	0.3
Os 58-48	〃 13	09 06	63 00	N	175 00	W	0	173	0.2
Os 58-49	〃 13	14 36	61 20	N	175 00	W	0	21	0.3
Os 58-50	〃 13	19 30	60 40	N	175 00	W	0	21	0.3
Os 58-51	〃 14	00 19	60 00	N	175 00	W	0	333	0.5
Os 58-52	〃 14	05 58	59 20	N	175 00	W	0	153	0.1
Os 58-53	〃 14	11 00	58 40	N	175 00	W	0	305	0.3
Os 58-54	〃 14	15 38	58 00	N	176 00	W	0	117	0.3
Os 58-55	〃 14	21 47	57 19	N	174 56	W	0	167	0.4
Os 58-56	〃 15	02 18	56 40	N	176 00	W	0	270	0.1
Os 58-57	〃 15	07 05	56 00	N	185 00	W	0	337	0.6
Os 58-58	〃 15	22 07	55 20	N	175 00	W	0	337	0.6
Os 58-59	〃 16	02 45	54 40	N	175 00	W	0	0	0.5
Os 58-60	〃 16	07 25	54 02	N	174 00	W	0	71	0.4
Os 58-61	〃 16	22 00	53 20	N	175 13	W	0	96	0.4
Os 58-62	〃 17	02 25	52 41	N	175 25	W	0	269	0.8
Os 58-63	〃 17	19 29	52 20	N	175 31	W	0	131	0.6
Os 58-64	〃 17	22 50	51 50	N	175 16	W	0	290	0.3
Os 58-65	〃 18	01 37	51 30	N	184 59	W	0	332	0.8
Os 58-66	〃 18	10 37	50 45	N	175 00	W	0	313	0.4
Os 58-67	〃 18	15 10	50 00	N	175 00	W	0	258	0.2
Os 58-68	〃 18	22 38	50 00	N	176 00	W	0	234	0.9
Os 58-69	〃 19	04 08	50 00	N	177 24	W	0	353	0.4
Os 58-70	〃 21	19 04	50 00	N	177 28	E	0	135	0.5
Os 58-71	〃 22	02 13	50 00	N	176 16	E	0	35	0.3
Os 58-72	〃 22	07 57	50 00	N	175 00	E	0	180	0.2
Os 58-73	〃 22	14 00	50 40	N	175 00	E	0	180	0.2
Os 58-74	〃 22	21 26	51 21	N	175 00	E	0	0	0.5
Os 58-75	〃 23	01 43	52 03	N	175 00	E	0	301	0.6
Os 58-76	〃 23	07 13	52 30	N	175 03	E	0	124	0.4
Os 58-77	〃 23	10 40	53 00	N	175 02	E	0	14	0.4
Os 58-78	〃 24	20 39	53 39	N	174 25	E	0	21	0.2

18. Data on Light Absorption of Sea Water *in situ*
(現場海水の光吸収度測定記録)

The instrument and method of measurement are the same as in Oshoro Maru cruise 39-B (1957) to the nothern North Pacific.

The measurements were made by N. Inoue.

Figures in the table which were made by S. Nishizawa represent the absorption coefficient per meter of the sea water for the green light, of which the center of gravity and half value width are 535mμ and 70mμ respectively.

Table 14. Data on light absorption of sea water in 1958 cruise 42 to the Bering Sea

Depth (m)	S. S.*	Depth	Os 9	Depth	Os 10	Depth	Os 11	Depth	Os 12	Depth	Os 13
0	0.587	0	0.348	0	0.563	0	0.553	0	0.428	0	>0.600
7	0.592	4	0.325	3	0.556	3	0.320	2	0.414	3	>0.600
7.5	0.562	10	0.482	6	0.566	4	0.320	6	0.442	9	0.571
9	0.472	15	0.463	10	0.586	9	0.333	12	0.453	10	0.596
11	0.400	21	0.248	14	0.451	15	0.367	18	0.377	15	0.579
13	0.339	27	0.117	20	0.366	26	0.307	26	0.208	23	>0.600
23	0.208	37	0'098	26	0.325	34	0.276			28	>0.600
28	0.202	44	0.090	31	0.253	40	0.230			37	>0.600
42	0.434	56	0.090	39	0.235	43	0.219			45	0.596
60	0.447	67	0.090	45	0.248	57	0.188			52	0.596
77	>0.600			57	0.228	71	0.188			58	0.579
				75	0.231	84	0.188			74	0.587

* Special station, 59-20N, 175-00W

IV

THE "HOKUSEI MARU" CRUISE 4 TO THE NORTH PACIFIC AND THE OKHOTSK SEA IN MAY-AUGUST 1958

北星丸第4次航海
北太平洋及オコツク海観測
昭和33年5月～8月

1. Cruise Report
（航海報告）

First cruise

Departure from Hakodate	May 13	函館出港
First hydrographic cast	May 14	海洋観測開始
First salmon gill-net set	May 14	鮭鱒流網開始
Last salmon gill-net haul	May 23	鮭鱒流網終了
Last hydrographic cast	May 24	海洋観測終了
Arrival at Hakodate	May 25	函館入港
Covered 1914 miles in totol 13 days at sea	（全航程1914浬，航海日数13日）	

Second cruise

Departure from Hakodate	June 7	函館出港
First hydrographic cast	June 10	海洋観測開始
First salmon gill-net set	June 12	鮭鱒流網開始
Last hydrographic cast	June 25	海洋観測終了
Last salmon gill-net haul	June 26	鮭鱒流網終了
Arrival at Hakodate	June 29	函館入港
Covered 3607 miles in total 23 days at sea	（全航程3607浬，航海日数23日）	

Third cruise

Departure from Hakodate	July 7	函館出港
First hydrographic cast	July 9	海洋観測開始
First salmon gill-net set	July 14	鮭鱒流網開始
Last salmon gill-net haul	July 24	鮭鱒流網終了
Last hydrographic cast	July 26	海洋観測終了
Arrival at Hakodate	July 30	函館入港
Covered 3594 miles in total 24 days at sea	（全航程3594浬，航海日数24日）	

Fourth cruise

Departure from Hakodate	Aug. 6	函館出港
First hydrographic cast	Aug. 7	海洋観測開始
First salmon gill-net set	Aug. 11	鮭鱒流網開始
Last salmon gill-net haul	Aug. 19	鮭鱒流網終了
Last hydrographic cast	Aug. 22	海洋観測終了
Arrival at Hakodate	Aug. 26	函館入港
Covered 2357 miles in total 21 days at sea	（全航程2357浬，航海日数21日）	

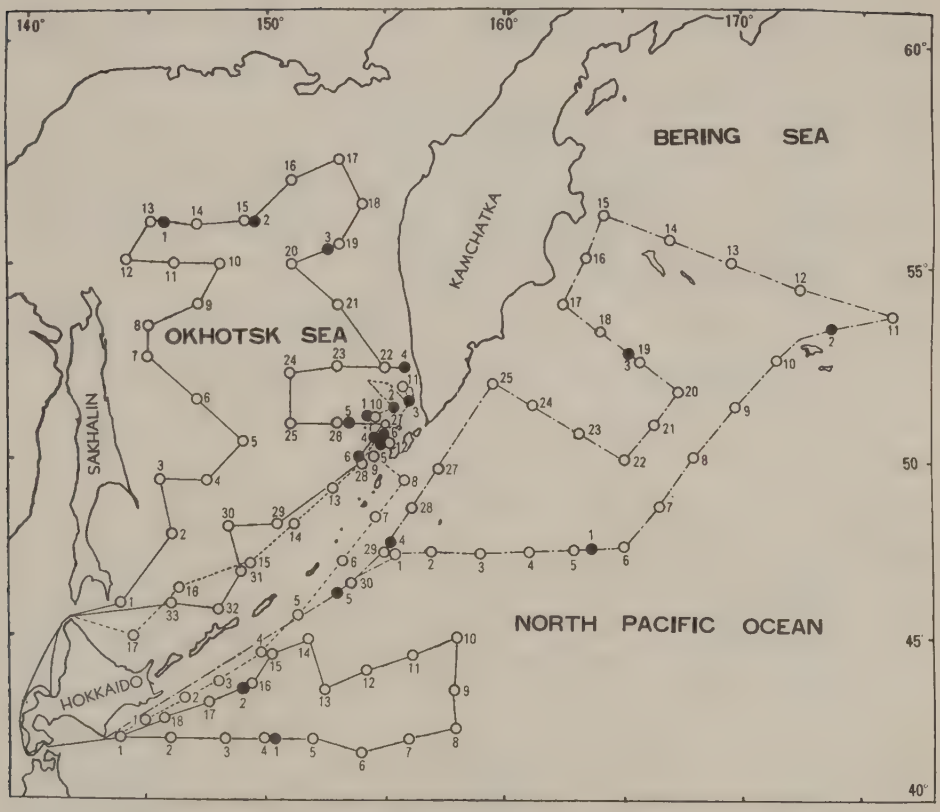

Fig. 1 Track, hydrographic stations and locations of salmon gill-net set of the "Hokusei Maru" cruise 4 to the North Pacific and the Okhotsk Sea

○ : Hydrographic station

● : Location of salmon gill-net fishing

2. Members of Staff Aboard

(乗船者)

First cruise

Captain	Shigeo Abe	船長	阿部茂夫
Crew			
Chief Officer	Shōichi Yamamoto	一等航海士	山本昭一
Second Officer	Shingo Takenaga	二等航海士	武長進午
Chief Engineer	Yūhachi Yanagiya	機関長	柳谷勇八
First Engineer	Minoru Fujita	一等機関士	藤田実

Second Engineer	Shiō Takashimizu	二等機関士　高清水　祥
Wireless Operator	Shiro Noguchi	無線通信士　野口四郎
and 14 men		外 14 名
Research men		
Lecturer	Hisashi Kondo (Chemistry)	講師　近藤　尚(化学)
Lecturer	Osamu Sato (Physics)	講師　佐藤　修(物理)
Lecturer	Sakuzo Nishiyama (Fisheries)	講師　西山作蔵(漁業)
Lecturer	Ken-ichiro Kyushin (Biology)	講師　久新健一郎(生物)
Student	Toshio Takikawa (Biology)	学生　滝川寿男(生物)
Hokkaido Rigional Fisheries Research Laboratory	Kiyoshi Fujii	
		北海道区水産研究所　藤井　浄(海洋)
Cadets		
9 cadets of Undergraduate Course of General Fishery		漁業学科学生9名
Total 36 persons		総員 36 名

Second cruise

Captain	Shōichi Yamamoto	船　長　山本昭一
Crew		
Chief Officer	Shingo Takenaga	一等航海士　武長進午
Chief Engineer	Yūhachi Yanagiya	機関長　柳谷勇八
First Engineer	Minoru Fujita	一等機関士　藤田　実
Second Engineer	Shiō Takashimizu	二等機関士　高清水　祥
Wireless Operator	Shiro Noguchi	無線通信士　野口四郎
and 14 men		外 14 名
Research men		
Lecturer	Sakuzo Nishiyama (Fisheries)	講師　西山作蔵(漁業)
Research Assistant	Tetsuichiro Kinoshita (Biology)	助手　木下哲一郎(生物)
Student	Katsuichi Tanaka (Biology)	学生　田中克一(生物)
Student	Yasuyuki Nakagawa (Biology)	学生　中川康之(生物)
Hokkaido Rigional Fisheries Research Laboratory	Ikuo Nasukawa	
		北海道区水産研究所　茄子川郁夫
Hokkaido Rigional Fisheries Research Laboratory	Kiyoshi Fujii	
		北海道区水産研究所　藤井　浄
Total 26 persons		総員 26 名

Third cruise

Captain	Shōichi Yamamoto	船　長　山本昭一
Crew		
Chief Officer	Shingo Takenaga	一等航海士　武長進午
Chief Engineer	Yūhachi Yanagiya	機関長　柳谷勇八
First Engineer	Minoru Fujita	一等機関士　藤田　実
Second Engineer	Shiō Takashimizu	二等機関士　高清水　祥

Wireless Operator	Shiro Noguchi	無線通信士　野口四郎
and 14 men		外 14 名
Research men		
Research Assistant	Tatsuaki Maeda (Fisheries)	助手　前田辰昭 (漁業)
Student	Takato Oguro (Fisheries)	学生　小黒孝人 (漁業)
Student	Toshio Takikawa (Biology)	学生　滝川寿男 (生物)
Hokkaido Rigional Fisheries Research Laboratory	Ikuo Nasukawa	北海道区水産研究所　茄子川郁夫
Hokkaido Rigional Fisheries Research Laboratory	Kiyoshi Fujii	北海道区水産研究所　藤井浄
Cadets		
18 cadets of Undergraduate Course of Pelagic Fishery		遠洋漁業科学生18名
Total 43 persons		総員 43 名

Fourth cruise

Captain	Seikichi Mishima	船長　三島清吉
Crew		
Chief Officer	Shōichi Yamamoto	一等航海士　山本昭一
Second Officer	Shingo Takenaga	二等航海士　武長進午
Chief Engineer	Yūhachi Yanagiya	機関長　柳谷勇八
First Engineer	Minoru Fujita	一等機関士　藤田実
Second Engineer	Shiō Takashimizu	二等機関士　高清水祥
Wireless Operator	Shiro Noguchi	無線通信士　野口四郎
and 14 men		外 14 名
Research men		
Professor	Ichirō Saitō (Fisheries)	教授　斎藤市郎 (漁業)
Resarch Assistant	Miki Oguro (Chemistry)	助手　小黒美樹 (化学)
Resarch Assistant	Tatsuaki Maeda (Fisheries)	助手　前田辰昭 (漁業)
Student	Tadayoshi Oki (Biology)	学生　沖忠良 (生物)
Hokkaido Rigional Fisheries Research Laboratory	Kiyoshi Fujii	北海道区水産研究所　藤井浄
Cadets		
11 cadets of Undergraduate Course of Pelagic Fishery		遠洋漁業科学生11名
Total 37 persons		総員 37 名

3. Research Committee
(調査委員)

Professor (Coordinator)	Ichirō Saitō (Fisheries) (代表　教授　斎藤市郎　漁業)
Professor	Giichi Kawasaki (Fisheries) (教授　川崎毅一　漁業)

Professor	Shin-ichi Satō (Ichthyology) (教授　佐藤信一　魚類)
Assistant Professor	Hideto Koto (Physical oceanography) (助教授　小藤英登　海洋)
Assistant Professor	Teruyoshi Kawamura (Plankton) (助教授　川村輝良　プランクトン)
Assistant Professor	Tatsuro Kubo (Salmon) (助教授　久保達郎　鮭鱒)
Assistant Professor (Captain)	Seikichi Mishima (Fisheries, Meteorology) (助教授　船長　三島清吉　漁業，気象)
Lecturer	Ken-ichiro Kyushin (Salmon) (講師　久新健一郎　鮭鱒)

4. Specification of Hydrographic Stations
(海洋観測地点)

Table 1. Hydrographic stations in 1958 cruise 4 to the North Pacific and the Okhotsk Sea

No. of cruise	No. of station	Ship's time		Greenwich mean time		Position		Depth of sea bottom (m)
		Date	Hour	Date	Hour	Latitude	Longitude	
1st	Ho 1	05—14	0615~0900	05—13	2115~2400	42°00′ N	144°00′ E	1100
	Ho 2	05—14	1830~2118	05—14	0930~1218	42°00′ N	146°00′ E	5000
	Ho 3	05—15	0615~0725	05—14	2115~2225	42°00′ N	148°18′ E	5000
	Ho 4	05—15	1528~1645	05—15	0628~0745	42°00′ N	150°00′ E	5050
	Ho 5	05—16	1437~1610	05—16	0537~0710	42°00′ N	152°00′ E	5000
	Ho 6	05—17	1500~1610	05—17	0600~0710	41°32′ N	154°00′ E	5000
	Ho 7	05—18	0240~0350	05—17	1740~1850	41°50′ N	156°00′ E	5400
	Ho 8	05—18	1400~1445	05—18	0500~0545	42°17′ N	158°00′ E	5500
	Ho 9	05—19	0715~0826	05—18	2215~2326	43°30′ N	158°00′ E	5500
	Ho 10	05—19	1900~2020	05—19	1000~1120	45°00′ N	158°00′ E	5000
	Ho 11	05—20	0620~0740	05—19	2120~2240	44°33′ N	156°10′ E	5200
	Ho 12	05—20	1930~2030	05—20	1030~1130	44°03′ N	154°18′ E	7000
	Ho 13	05—21	0600~0655	05—20	2100~2155	43°30′ N	152°30′ E	8000
	Ho 14	05—21	1810~1900	05—21	0910~1000	45°00′ N	151°53′ E	8000
	Ho 15	05—22	0420~0524	05—21	1920~2024	44°39′ N	150°17′ E	7500
	Ho 16	05—22	1500~1616	05—22	0600~0716	43°33′ N	147°23′ E	7000
	Ho 17	05—23	1000~1120	05—23	0100~0220	43°01′ N	147°38′ E	6000
	Ho 18	05—24	0620~0737	05—23	2120~2237	42°30′ N	165°56′ E	1500
2nd	Ho 1	06—10	2200~2323	06—10	1300~1423	47°30′ N	155°00′ E	2500
	Ho 2	06—11	0830~0930	16—10	2330~0030	47°30′ N	157°00′ E	5000
	Ho 3	06—11	1745~1803	06—11	0845~0903	47°28′ N	159°00′ E	5000
	Ho 4	06—12	0355~0510	06—11	1855~2010	47°30′ N	161°00′ E	5800
	Ho 5	06—12	1340~1450	06—12	0440~0550	47°34′ N	163°00′ E	5800
	Ho 6	06—13	0840~0934	06—12	2340~0034	47°33′ N	165°00′ E	4442
	Ho 7	06—13	2105~2208	06—13	1205~1308	48°47′ N	166°34′ E	4400
	Ho 8	06—14	0800~0900	06—13	2300~2400	50°04′ N	168°00′ E	4000
	Ho 9	06—14	1930~2018	06—14	1030~1118	51°18′ N	169°56′ E	5500
	Ho 10	06—15	0630~0724	06—14	2130~2224	52°30′ N	171°34′ E	

Table 1. (Continued)

No. of cruise	No. of station	Ship's time		Greenwich mean time		Position		Depth of sea bottom (m)
		Date	Hour	Date	Hour	Latitude	Longitude	
2nd	Ho 11	06—16	0840～0925	06—15	2340～0025	53°50′ N	175°19′ E	
	Ho 12	06—16	2045～2131	06—16	1145～1231	54°24′ N	172°22′ E	
	Ho 13	06—17	0900～0945	06—17	0000～0045	55°01′ N	169°38′ E	
	Ho 14	06—17	2110～2206	06—17	1210～1306	55°35′ N	167°00′ E	3000
	Ho 15	06—18	1000～1045	06—18	0100～0145	56°09′ N	164°14′ E	
	Ho 16	06—18	1800～1858	06—18	0900～0958	55°07′ N	163°30′ E	
	Ho 17	06—19	0240～0342	06—18	1740～1842	54°02′ N	162°30′ E	
	Ho 18	06—19	1110～1155	06—19	0210～0255	53°21′ N	164°03′ E	
	Ho 19	06—20	0515～0603	06—19	2015～2103	52°28′ N	165°40′ E	5000
	Ho 20	06—20	1450～1535	06—20	0550～0635	51°52′ N	167°24′ E	3248
	Ho 21	06—21	0000～0106	06—20	1500～1605	50°56′ N	166°15′ E	
	Ho 22	06—21	0900～1006	06—21	0000—0106	50°00′ N	165°00′ E	
	Ho 23	06—21	1900～1951	06—21	1000～1051	50°40′ N	163°05′ E	5000
	Ho 24	06—22	0500～0605	06—21	2000～2105	51°21′ N	161°13′ E	
	Ho 25	06—22	2100～2230	06—22	1200～1330	52°00′ N	159°32′ E	
	Ho 26							
	Ho 27	06—23	2300～2350	06—23	1400～1450	49°48′ N	157°12′ E	
	Ho 28	06—24	0900～0958	06—24	0000～0058	48°40′ N	156°07′ E	5000
	Ho 29	06—25	0515～0642	06—24	2015～2142	47°30′ N	155°00′ E	
	Ho 30	06—25	1600～1650	06—25	0700～0750	46°30′ N	153°33′ E	
3rd	Ho 1	07—09	1900～2002	07—09	1000～1102	46°00′ N	144°00′ E	900
	Ho 2	07—10	1225～1335	07—10	0325～0435	48°00′ N	146°00′ E	1500
	Ho 3	07—10	2315～0020	07—10	1415～1520	49°30′ N	145°30′ E	600
	Ho 4	07—11	0900～0957	07—11	0000～0057	49°30′ N	147°20′ E	1350
	Ho 5	07—11	1914～2045	07—11	1014～1145	50°30′ N	149°00′ E	
	Ho 6	07—12	0604～0706	07—11	2104～2206	51°40′ N	147°07′ E	
	Ho 7	07—12	1813～1918	07—12	0913～1018	52°45′ N	145°00′ E	1500
	Ho 8	07—13	0000～0128	07—12	1500～1618	53°30′ N	145°00′ E	
	Ho 9	07—13	1000～1125	07—13	0100～0225	54°00′ N	147°00′ E	700

Table 1. (Continued)

No. of cruise	No. of station	Ship's time		Greenwich mean time		Position		Depth of sea bottom (m)
		Date	Hour	Date	Hour	Latitude	Longitude	
3rd	Ho 10	07—13	1900~2000	07—13	1000~1100	55°00′ N	148°00′ E	750
	Ho 11	07—14	0347~0424	07—13	1847~1924	55°00′ N	146°00′ E	600
	Ho 12	07—14	1100~1200	07—14	0200~0300	55°10′ N	144°10′ E	1150
	Ho 12′	07—14	1453~1630	07—14	0553~0730	55°30′ N	144°30′ E	250
	Ho 13	07—14	2020~2050	07—14	1120~1150	56°00′ N	145°17′ E	240
	Ho 14	07—15	1040~1149	07—15	0140~0249	55°49′ N	147°06′ E	430
	Ho 15	07—15	1900~1921	07—15	1000~1021	56°00′ N	149°00′ E	250
	Ho 16	07—16	1440~1510	07—16	0540~0610	57°00′ N	151°00′ E	400
	Ho 17	07—16	2235~2350	07—16	1335~1450	57°30′ N	153°00′ E	480
	Ho 18	07—17	0810~0852	07—16	2310~2352	56°30′ N	154°30′ E	350
	Ho 19	07—17	1630~1707	07—17	0730~0807	55°30′ N	153°00′ E	520
	Ho 20	07—18	1150~1225	07—18	0250~0325	55°00′ N	157°00′ E	380
	Ho 21	07—18	2230~2320	07—18	1330~1420	54°00′ N	153°00′ E	570
	Ho 22	07—19	1200~1233	07—19	0300~0333	52°30′ N	155°00′ E	270
	Ho 23	07—20	1530~1659	07—20	0630~0759	52°30′ N	153°00′ E	630
	Ho 24	07—21	0200~0310	07—20	1700~1810	52°20′ N	151°00′ E	1140
	Ho 25	07—21	1230~1425	07—21	0330~0525	51°00′ N	151°00′ E	
	Ho 26	07—22	1515~1625	07—22	0615~0725	51°00′ N	153°00′ E	720
	Ho 27	07—23	0910~1005	07—23	0010~0105	51°00′ N	155°00′ E	840
	Ho 28	07—23	1800~1916	07—23	0900~1016	50°00′ N	154°00′ E	
	Ho 29	07—25	0200~0328	07—24	1700~1828	48°22′ N	150°30′ E	
	Ho 30	07—25	1200~1408	07—25	0300~0508	48°22′ N	148°30′ E	
	Ho 31	07—26	0005~0227	07—25	1505~1727	47°00′ N	149°00′ E	
	Ho 32	07—26	1005~1112	07—26	0105~0212	45°53′ N	148°04′ E	
	Ho 33	07—26	1930~2103	07—26	1030~1203	46°00′ N	146°00′ E	
4th	Ho 1	08—07	1200~1335	08—07	0300~0435	42°33′ N	145°00′ E	
	Ho 2	08—07	2230~2326	08—07	1330~1426	43°10′ N	146°30′ E	
	Ho 3	08—08	0815~0925	08—07	2315~0025	43°45′ N	148°00′ E	
	Ho 4	08—08	2035~2143	08—08	1135~1243	44°30′ N	150°00′ E	

Table 1. (Continued)

No. of cruise	No. of station	Ship's time		Greenwich mean time		Position		Depth of sea bottom (m)
		Date	Hour	Date	Hour	Latitude	Longitude	
4th	Ho 5	08—09	1140～1357	08—09	0240～0457	45°38′ N	151°20′ E	
	Ho 6	08—10	0354～0450	08—09	1854～1950	47°14′ N	153°15′ E	
	Ho 7	08—10	1517～1630	08—10	0617～0730	48°27′ N	154°47′ E	
	Ho 8	08—10	2350～0020	08—10	1450～1520	49°31′ N	155°42′ E	
	Ho 9	08—11	0835～0925	08—10	2335～0025	50°16′ N	154°21′ E	
	Ho 10	08—11	1850～1950	08—11	0950～1050	51°11′ N	154°26′ E	
	Ho 10′	08—12	1830～1915	08—12	0930～1015	51°22′ N	155°14′ E	
	Ho 11	08—15	1120～1207	08—15	0220～0307	51°59′ N	155°40′ E	
	Ho 12	08—17	1800～1829	08—17	0900～0929	50°35′ N	154°45′ E	
	Ho 13	08—19	1935～2037	08—19	1035～1137	49°20′ N	152°45′ E	
	Ho 14	08—20	0551～0648	08—19	2051～2148	48°21′ N	151°13′ E	
	Ho 15	08—20	1737～1835	08—20	0837～0935	47°08′ N	149°22′ E	
	Ho 16	08—21	1005～1042	08—21	0105～0142	46°27′ N	146°15′ E	
	Ho 17	08—21	2330～0025	08—21	1430～1525	45°00′ N	144°29′ E	

5. Items of Observations and Procedure at Sea
(調査項目及び海上作業)

Meteorological observations (気象観測)

Every three-hour-interval, covering the whole course

Measurement of surface temperature (表面水温観測)

Every hour-interval, covering the whole course

Hydrographic cast (海洋観測)

At 98 stations, covering depths from the surface to usually 1500 m. Cast to 0, 10, 20, 30, 50, 75, 100, 150, 200, 300, 400, 500, 600, 800, 1000, 1200 and 1500m, in length of wire paid out. In deep cast each Nansen bottle carried two protected thermometers and an unprotected thermometer.

Analyses of water samples (試水分析)

Chlorinity was measured on almost all depths and stations.

Plankton sampling (プランクトン採集)

Duplicate vertical hauls with NORPAC standard net (45 cm × 180 cm) from approximately 150 m depth at each hydrographic stations.

Vertical hauls with 30 cm × 150 cm fine mesh net from approximately 100 m depth at each hydrographic station.

Fish larva net tow (稚魚ネット曳網)

Fish larva net, 130 cm in mouth diameter and 450 cm in length, was towed at the surface layer at a speed as low as 2 knots for ten minutes at every hydrographic station as well as at sunset daily while underway.

Measurements of biological characters on salmon caught by salmon gill-net fishing (漁獲標本の生物学的測定)

6. Publications issued up to the Present
(発表された報告，研究論文)

1) Nishiyama, S., S. Yamamoto, Y. Akiba and M. Ueno. (1959). A study on the fishing grounds. Bull. Fac. Fish., Hokkaido Univ. 10 (1), 31-36.
2) Akiba, Y., S. Yamamoto and M. Ueno. (1959). On the oceanographic conditions of the Okhotsk Sea in summer of 1958. Ibid. 37-46.
3) Maeda, T., S. Mishima and I. Saito. (1959). Studies on the Fishing grounds. Ibid. 47-56.

7. Data on Meteorological Observations
(気象観測記録)

Observations were made under sponsorship of ship's officers at every three-hour interval at sea.

Y′Y′ : Data and time in Greenwich Mean Time (Universal Time)

Movement of wind direction (dd) and speed (ff) were measured by means of aerovane type anemometer set on the top of pole on bridge at the height of 10.5 meters above the sea surface.

Measurements of air temperature (TT) and dew point temperature (T_dT_d) were made by means of Asmann aspiration dry and wet bulb thermometer set on the upper deck at the height of 5 meters above the sea surface.

$T_tT_tT_t$: Temperature of surface water (OO.OC).

× : Uncertain

Table 2. Data on meteorological observations in 1958 cruise 4 to the North Pacific and the Okhotsk Sea

Y′Y′	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_tT_tT_t$
5 13	2	419	435	18	6	25	05	97	03	1	158	07						7		08		25	032
13	2	420	440	21	5	25	09	98	02	0	148	05						7	10	04		25	031
14	2	420	453	06	0	25	09	98	03	2	135	07	4	6	2			7	02	08	04	25	032
14	2	420	459	09	2	25	09	98	01	0	140	06						4	00	04	02	25	045
14	2	420	460	12	1	21	05	98	01	0	150	05						4	00	08	02	22	011
14	2	420	473	15	0	22	05	98	00	0	180	04						2	03	05	01	22	014
14	2	420	486	18	0	13	05	96	00	4	165	03							02	02		22	019
14	2	420	498	21	6	22	05	96	03	1	175	06	9	8		2	1	2	10	01		22	054
15	2	420	482	04	7	22	02	92	46	2	175	09		7		2		4	00	01		22	063
15	2	420	492	03	7	22	02	96	11	2	180	05		7				3	01	05	03	21	026
15	2	420	499	06	9	13	02	91	44	4	178	06	9							07	05	14	027
15	2	420	502	09	7	18	09	96	03	4	151	05		4			8	7	10	03		18	035
15	2	420	502	12	7	16	05	95	03	4	170	06		4			8	4	00	04		16	038
15	2	420	502	15	7	20	05	93	46	4	163	06						5	09	05	06	20	033
15	2	420	502	18	7	20	05	95	02	1	147	05		4				6	16	03		20	036
16	2	420	508	00	7	14	09	95	61	2	101	08	5	4		2		7	10	09	07	14	034
16	2	420	541	03		16	05	92	45	5	081	06						7	02	07	06	18	024
16	2	420	520	06		15	09	92	45	5	036	07						7	05	09	07	16	027
16	2	419	521	09		13	14	92	61	6	983	08						7	08	11	07	13	024
16	2	419	520	12	9	22	19	93	53	5	931	08		9				7	05	02	04	18	069
16	2	419	519	15		32	14	95	20	5	961	06						3	03	56	05	18	092
16	2	414	525	18	8	02	14	94	20	5	057	07		6				2	09	54		31	088
17	2	414	530	00	8	01	14	96	01	5	067	07	5	4				2	10	55	06	01	093
17	2	414	532	03	9	02	14	96	01	2	091	08						2	04	53	06	01	096
17	2	415	540	06	8	02	14	95	01	2	100	08	6	7		2		2	01	52	05	01	091
17	2	416	543	09	8	02	09	95	03	2	128	07	5	7	7	5		2	01	53	03	06	080
17	2	417	550	12	8	06	14	95	02	2	130	06	6	7		5		2	02	52	03	06	081
17	2	417	555	13	8	07	14	95	02	2	131	06	7	7		2		2	01	56	02	06	088
17	2	418	560	16	8	05	05	95	25	8	141	05	8	7		2		2	01	56	04	06	082

Table 2. (Continued)

Y'Y'	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_tT_tT_t$
5 17	2	419	563	18	9	05	05	96	00	5	168	06	9		9			2	01	52	04	06	074
18	2	419	569	00	7	08	05	96	02	2	150	06		6		2		2	05	52	06	07	071
18	2	423	577	03	8	08	02	96	01	2	141	09	8	6		2		0	01	52		05	081
18	2	423	580	06	8	08	02	96	01	2	141	09	8	6		2		4	00	52	04	05	084
18	2			09	9	14	09	96	00	5	120	06	9			9		7	02	52	09	14	070
18	2	425	580	69	4	14	05	96	01	6	110	06	7	6	3	1		1	10	68	06	14	069
19	2	437	580	00	8	35	14	96	03	2	130	03	8	6		2		2	02	54		36	049
19	2	440	580	03	8	31	09	96	03	1	120	02	6	4	7	5		7	01	52	01	31	032
19	2	445	580	06	8	31	09	96	02	2	152	02	6	4	7	5		2	03	52	01	31	028
19	2	444	580	09	8	29	09	96	02	2	156	02	6	4	7	5		2	01	52	01	31	026
19	2	449	579	02	6	26	09	96	01	1	156	00	3	1		2		3	00	54		25	018
19	2	448	573	15	6	25	09	95	01	1	150	03	3	5		2		4	01	03	02	25	014
19	2	447	568	18	8	25	09	95	03	2	140	04	8	5				7	01	04		25	016
19	2	446	561	21	8	25	09	96	03	2	139	04						5	01	16		25	015
20	2	445	560	00	1	25	05	96	00	0	142	04					8	5	00	02	03	25	022
20	2	443	556	03	4	27	05	96	02	0	150	05				1		5	01	05	04	26	025
20	2	442	549	06	4	25	09	96	02	0	150	05				1		4	00	04	04	26	031
20	2	440	546	09	4	25	09	96	02	0	150	05						6	04	04		26	032
20	2	440	542	12	4	26	02	96	02	0	150	03					8	6	00	00		25	025
20	2	439	537	15	9	20	05	91	42	4	140	03	9		0			7	01	01		20	018
20	2	437	531	18	9	20	05	90	45	4	130	03	9		0			7	01	01		20	026
20	2	435	523	21	9	20	05	90	45	4	100	03	9		0			7	02	01	02	20	026
21	2	436	525	00	9	07	05	92	45	4	061	05	9		0			7	04	04		07	025
21	2	440	525	03	9	07	05	94	63	6	043	03	9		0			7	02	04	02	07	030
21	2	445	525	06	9	05	09	94	63	6	035	03	9		0			7	01	01	01	05	016
21	2	450		09	9	05	09	94	63	6	040	04	9		0			7	01	24	01	05	018
21	2	449	522	12	9	29	02	93	58	6	052	03	9		6			2	01	01		29	016
21	2	446	517	15	8	29	02	93	00	6	090	04	9					2	04	01	03	29	028
21	2	443	511	18	8	29	02	93	03	2	100	04	6			6		2	01	04	02	27	020

Table 2. (Continued)

Y′Y′	Q	LaLaLa	LoLoLo	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	dwdw	$T_tT_tT_t$
5 21	2	459	507	21	5	25	02	94	03	1	127	06	7		0			2	01	01	02	27	026
22	2	440	503	00	8	23	02	95	02	4	141	05	8			1	7	2		01	04	16	030
22	2	440	493	03	3	18	02	98	01	0	148	06	0			2	8	2	07	04	02	18	033
22	2	436	494	06	6	18	02	98	03	0	152	07	0			2	5	2	01	05	04	18	060
22	2	431	491	12	9	15	02	92	43	0	179	06						2	03	02	04	15	042
22	2	435	493	15	9	14	09		00	2	170	05						8	01	04	04	14	036
22	2	432	490	21	7	14	09	95	01	2	161	06					7	5	01	03	05	14	030
23	2	431	484	00	8	14	09	94	28	2	150	07					7	0	01	04	06	14	024
23	2	429	481	03	9	15	09	92	45	4	111	07	9		9			7	04	06	06	14	040
23	2	427	477	06	6	09	14	98	01	1	081	07	2	4		2		7	10	07	04	09	036
23	2	425	471	09	8	14	14	97	03	2	055	06	8	7		2		7	02	07	04	14	030
23	2	425	465	12	8	14	14	97	02	2	001	05	8	7		2		7	05	03		14	019
23	2	425	450	15	9	14	19	92	53	5	950	05	9		9			7	06	05	05	14	028
23	2	428	453	18	9	14	14	92	53	5	931	05	9	0				7	19	01	05	14	050
23	2	425	450	21	9	21	02	93	45	4	940	05							01	00		25	048
24	2	427	444	00	9	21	02	93	45		951	06							01	00	04	25	052
24	2	422	442	03	2	27	14	97	01	4	926	07	2						03	05	05	23	043
24	2	420	436	06	1	24	19	98	03	0	931	07				4	5		05	01	06	24	044
6 7	2	418	434	18	5	06	02		02		105	07	7	5						07	10		070
7	2	420	440	21	8	11	05	96	03	0	085	09	8	4				7	07	04	07	11	076
8	2	423	446	00	7	20	05	96	03	2	081	11	7					5	01	03	10	20	082
8	2	425	451	03	7	16	05	97	02	2	098	12						4	04	13	12	18	
8	2	426	458	06	7	18	09	97	02	2	093							0	02	59	13	18	185
8	2	428	464	09	7	18	09	96	03	2	103	12	6	6		3	1	2	01	06		18	099
8	2	430	469	12	9	18	09	91	46	2	120	10						2	00	00	09	18	071
8	2	432	475	16	9	18	14	91	45	4	123	08						2	00	01	08	18	066
8	2	434	481	18		06	14	91	45	4	133	07						2	10	06	07	18	059
8	2	435	487	21	9	18	05	91	45	4	140	08						2	10	02	08	18	060

Table 2. (Continued)

Y′Y′	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_tT_tT_t$
6 9	2	438	493	00	9	18	05	91	45	4	166	08						2	03	01	06	20	060
9	2	439	499	03	7	16	05	97	02	4	147	08	7			1	9	2	01	02	08	20	062
9	2	443	503	06		14	05	92	43	4	159	07						2	00	02	06	20	060
9	2	446	508	09	9	18	05	91	45	4	173	06						2	02	03	06	18	044
9	2	449	512	12	9	16	05	91	45	4	170	05						0	01	02	03	18	030
9	2	456	523	15	9	16	05	91	45	4	172	06						5	00	01	05	18	038
9	2	456	522	18		16	05	91	45	4	171	04						5	00	02	04	18	029
9	2	458	525	21	9	11	05	91	45	4	172	04						4	00	03	04	11	024
10	2	461	530	00	9	11	05	91	45	4	191	04						4	19	03	04	13	028
10	2	465	535	03	8	11	05	98	02	4	191	04	8			2		4	19	14	04	13	026
10	2	468	540	06	8	11	05	98	02	2	195	04						2	04	02	04	13	026
10	2	471	545	09	8	11	05	96	02	2	178	03	8	8				7	02	01	03	13	024
10	2	474	549	12	8	11	05	96	02	2	187	03	8	7				5	01	00	03	13	027
10	2	475	550	15	8	13	02	96	01	2	190	04	8	7				2	00	01	02	13	031
10	2	475	558	18	8	15	05	97	03	2	171	03	4					4	00	08	03	07	026
10	2	475	564	21	8	14	05	96	03	2	180	03	8	6				2	01	00	03	06	032
11	2	475	570	00	8	14	05	96	03	2	191	03	8	6		2	1	1	01	01	03	06	032
11	2	475	577	03	8	14	02	96	03	2	172	04	6	1		2			03	01	03	14	032
11	2	475	584	06	8	14	02	96	03	2	173	03	6	1		2		1	01	00	02	14	032
11	2	475	591	09	8	09	02	96	02	2	170	03	8	4				7	03	00	03	09	033
11	2	475	595	12	8	11	02	96	02	2	190	03	8	1		2		1	03	52	03	11	040
11	2	475	602	15	8	07	02	96	61	6	161	03	8	4		2		0	03	52	01		040
11	2	475	608	18	8	05	02	96	03	2	161	03	8	4		2		4	00	64	02	05	037
11	2	475	611	21	8	09	05	96	03	2	162	04	8	6				4	00	51	03	09	040
12	2	475	620	00	8	09	05	96	02	2	171	03	8	4		2		2	08	52	03	09	047
12	2	476	626	03	8	08	05	96	02	2	152	05	8	7		2		0	02	00	01	08	051
12	2	476	630	06	8	06	05	97	02	2	161	05	8	7		2		3	09	24	03	09	052
12	2	476	632	15	9	07	02	94	20	2	146	02						7	01	53	02	09	048
12	2	476	643	18	8	11	05	97	03	2	138	02	8	6				7	01	55	02	11	045

Table 2. (Continued)

Y′Y′	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_tT_tT_t$
6 13	2	476	650	00	8	10	05	96	02	2	136	04	8	7		2		0	00	51	03	10	045
13	2	478	654	03	7	05	05	98	02	2	131	05	6	2				5	05	06	04	02	042
13	2	482	658	06	8	09	05	98	02	2	132	05	8	6				4	00	00	05	09	044
13	2	485	662	09	9	09	05	93	42	4	133	03						4	00	53	02	09	045
13	2	488	666	12	9	11	05	93	43	4	133	04						4	00	52	01	11	048
13	2	492	671	15	9	09	05	93	41	4	136	02						3	03	54	0	19	042
13	2	495	676	18	9	09	02	93	41	4	140	03						4	00	54	02	09	049
13	2	498	679	21	9	05	02	93	41	4	140	04						4	00	52	03	05	049
14	2	500	682	00	8	18	05	95	02	2	136	05	8	7				8	04	51	01	18	054
14	2	505	686	03	8	25	05	98	02	2	131	06	8	7				5	05	14	05	11	055
14	2	508	690	06	8	25	05	96	02	2	130	05	8	6				4	00	00	05	20	052
14	2	511	695	09	9	00	0	93	41	4	133	05	9					4	00	51	05	23	052
14	2	513	700	12	8	24	05	94	28	2	130	05	8	7		2		7	00	51	02	24	054
14	2	517	704	15	8	14	02	95	03	2	126	04	9		6			5	04	51	03	14	053
14	2	521	709	18	9	00	0	92	42	4	128	05	9					4	00	51	03	18	052
14	2	523	712	21	9	24	05	93	41	4	130	05	9					4	00	53	05	20	060
15	2	526	717	00	8	27	02	95	02	2	130	06	8	7				4	00	00	03	21	060
15	2	531	723	03	7	07	02	97	02	2	126	07	8	7				4	00	10	04	23	060
15	2	533	731	06	8	09	02	95	02	4	124	06	8	6				4	00	51	05	08	060
15	2	533	734	09	8	02	02	90	02	2	131	08						4	07	21	04	08	060
15	2	533	734	15	7	15	02	98	02	2	131	05						4	00	52	03	31	061
15	2	536	745	21	8	06	02	98	02	2	131	05	8	7		2		4	00	52	04		060
16	2	538	753	00	8	27	0	98	02	2	132	06	8	7				4	00	00	05		060
16	2	539	741	03		28	02	97	02	2	132	05	7	6				4	00		02		
16	2	541	738	06	7	29	05	97	02	2	134	05	7	6				4	00	51	04		056
16	2	543	730	09	7	29	05	92	21	2	135	05	8	7		2		4	00	51	03	29	057
16	2	544	725	12	7	27	09	95	03	8	136	05	7	7		2		4	00	54	02	29	052
16	2	545	718	15	8	27	09	95	51	2	136	04	8	7		2		4	00	51	03	29	052
16	2	547	711	18	8	27	09	95	02	2	136	04	7	7		2		4	00	52	03	29	052

Table 2. (Continued)

Y'Y'	Q	$L_aL_aL_a$	$L\ L_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_rT_rT_r$
6 16	2	548	704	21	8	27	09	95	02	2	146	04	8			2		2	01	51	03	29	051
17	2	550	696	00	8	23	14	98	02	2	161	05	8			2		3	02	52	02	23	054
17	2	551	691	03	7	23	14	98	02	2	151	05	8			2		4	10	51	03	23	054
17	2	553	684	06	6	23	14	97	02	2	140	06	4	7		2	2	4	01	00	05	23	055
17	2	554	678	09	6	23	14	98	02	2	136	02	8	6		2		7	05	01	04	23	054
17	2	556	669	12	8	23	14	96	03	2	131	05	8	6		2		5	05	04	03	23	046
17	2	557	665	15	8	23	09	94	03	2	121	05	6			2		5	10	02	05	23	041
17	2	558	658	18	8	23	14	94	03	3	123	04	8	7				4	08	01	04	23	036
17	2	559	652	21	8	23	09	96	02	2	125	06	8	6				2	03	01	05	23	047
18	2	561	645	00	8	23	09	92	44	2	131	05	8	6		2		3	06	57	03	23	052
18	2	560	640	03	8	23	14	92	45	2	131	04	8	7		1		4	00	03	04	23	024
18	2	556	637	06	9	23	05	91	45	4	138	04	9			0		4	07	02	04	23	027
18	2	551	633	09	9	23	05	92	43	4	148	03						2	10	00	03	23	030
18	2	549	631	12	8	23	05	92	44	4	161	04						2	13	51	03	23	046
18	2	544	628	15	9	23	05	91	47	4	171	05	9					2	10	02	03	23	036
18	2	541	625	18	8	23	02	96	02	2	184	05	5	6		3			08	02	05	23	035
18	2	538	630	21	8	23	02	96	03	2	206	06	5	7		3		2	82	05	04	23	049
29	2	538	640	06	5	13	02		02	2	239	05	4		8	1		2	33	58	04	13	054
29	2	533	645	09	7	09	02	96	03	2	238	07	7	4				4	00	00	06	09	064
29	2	527	652	12	8	07	02	96	03	2	245	05	8	4		2		2	07	52	05	07	065
29	2	527	652	15	8	07	02	96	02	2	244	06	8	4				4	00	00	04	07	062
29	2	527	652	18	8	07	02	96	02	2	267	05	8	4		1		2	23	52	05	07	061
20	2	525	657	21	8	14	02	96	02	2	259	06	4			2		5	08	00	03	06	060
20	2	522	663	00	8	14	02	98	02	2	266	06	4			2		2	07	68	03	06	064
20	2	521	669	03	6	00	0	98	02	2	260	08	4	5		3				02	07		067
20	2	518	674	06	6	34	02	96	02	0	240	08	4	4				7	02	01	05	34	070
20	2	517	673	09	2	28	02	98	01	1	241	06	2							51	05	25	072
20	2	513	668	12	9	28	0	91	45		236	06	9		0			5	05	51	04	25	070
20	2	509	663	15	9	27	02	93	41	4	233	07	9	0				4	00	00	04	27	063

Table 2. (Continued)

Y′Y′	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_tT_tT_t$
6 20	2	506	658	18	8	23	02	96	03	2	225	06	9	4				7	01	51	05	23	064
20	2	504	656	21	4	23	05	98	02	2	239	06	9	4				3	01	08	06	23	056
21	2	500	650	00	4	23	05	98	02	0	226	06	1		8		1	5	13	00	05	23	060
21	2	501	646	03	6	29	05	96	41	2	013	07	4	7		6	4	7	13	01	06	29	061
21	2	504	639	06	5	27	05	97	02	1	200	06	5	1				7	01	52	06	28	066
21	2	506	633	09	8	27	09	97	03	1	201	06	5	2		6		7	01	54	05	28	062
21	2	503	630	12	8	27	09	93	03	1	201	06	4	2		2		4	00	56	04	28	064
21	2	500	624	15	9	27	09	93	41	3	168	06	9					4	39	53	04	28	060
21	2	512	616	18	8	26	09	95	02	2	160	05	8	7				4	08	52	04	26	060
21	2	513	612	21	8	27	14	95	02	2	156	05	8	7				5	04	08	05	26	052
22	2	515	607	00	8	27	14	93	02	2	136	05	8	7				5	20	56	05	26	054
22	2	517	603	03	8	22	19	93	02	2	130	06	8	5				7	06	02	06	22	048
22	2	518	601	06	8	23	19	93	02	2	125	06	8	5				7		09	06	22	050
22	2	518	601	09	9	23	19	92	61	2	101	05						7	24	58	02	22	024
22	2	520	593	12	9	23	14	91	28	2	076	05						7	25	01	03	22	040
22	2	519	592	15	9	20	14	91	42	4	044	05	9					7	32	01	04	20	040
22	2	516	590	18	1	23	14	96	02	0	074	05	1	3				2	30	00	04	23	046
22	2	513	590	21	1	23	14	96	02	0	074	05	1	3				4	00	05	05	23	047
23	2	510	584	00	3	23	14	98	02	0	071	06	1	3				5	03	08	05	23	043
23	2	508	586	03	6	27	19	96	03	2	068	05					6	7	03	00	04	27	048
23	2	507	582	06	4	28	19	96	03	2	081		1	3				1	03	02	05	27	053
23	2	507	582	09	4	28	14	96	02	2	081	06	1	3				4	00	03	05	27	049
23	2	495	580	12	3	25	05	96	02	2	091	05	0		1	3		3	01	02	05	27	052
23	2	498	572	15	6	27	09	96	03	3	092	05				6		4	01	00	05	27	052
23	2	494	568	18	7	27	05	96	02	2	091	06	7	4		6		4	01	02	05	27	047
23	2	491	563	21	7	28	02	99	02	2	105	06	7	4				2	14	01	05	27	055
24	2	487	561	00	8	21	02	98	03	2	066	06	2	3	2			5	39	01	05	27	055
24	2	485	559	03	9	18	02	94	41	2	054	07	9					7	12	01	05	18	061
24	2	482	555	06	9	18	05	94	43	2	032	06							22	01	05	18	053

Table 2. (Continued)

Y′Y′		Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_fT_fT_f$
6	24	2	477	552	09	9	18	02	92	43	2	031	06							01	01	05	18	053
	24	2	477	522	12	9	18	02	93	20	5	040	06	9					4	09	00	05	18	054
	24	2	477	522	15	9	18	02	92	43	2	020	06						7	20	00	06	18	056
	24	2	475	550	21	9	18	02	93	43	2	006	06						7	14	01	05	18	056
	25	2	472	546	00	9	19	02	91	45	4	010	06	9					2	04	01	06	19	053
	25	2	469	542	03	9	18	02	93	42	4	010	07						4	00	03	06	18	048
	25	2	465	536	06	9	25	02	93	44	2	010	08						4	00	05	07	18	048
	25	2	465	536	12	9	15	02	92	42	2	049	06						1	39	01	06	15	058
	25	2	465	536	15	9	16	02	93	43	2	079	06						2	30	00	05	16	055
	26	2	459	527	00	9	18	02	92	45	4	074	06	9							02	06	18	044
	26	2	457	527	03	9	18	02	92	45	7	070	08						4	04	02	07	18	063
	26	2	454	514	06	9	19	05	92	45	4	075	07						3	05	01	06	18	063
	26	2	453	510	09	9	20	05	96	46	2	070	07						6	05	01	06	20	066
	26	2	448	505	12	6	18	05	96	03	2	046	07	3	6	4	4		7	21	04	05	18	060
	26	2	447	499	15	6	20	09	96	03	2	004	09	3	6	4	4		7	42	04	07	20	068
	26	2	445	496	18	8	20	09	93	43	2	021	08	3	6					23	02	07	20	068
	26	2	428	463	21	9	20	09	91	46	4	001	10	5						17	03	09	20	081
	27	2	439	484	00	4	22	09	96	41	4	002	09					4	4	00	03	09	22	068
	27	2	439	483	03	6	25	05	96	02	1	002	10					6	4	00	05	09	24	076
	27	2	436	478	06	3	29	05	96	02	0	026	11					3	8	24	06	09	29	076
	27	2	434	487	09	3	27	02	96	02	0	031	10					2		05	04	08	27	075
	27	2	432	469	12	5	27	02	96	41	2	051					5	4	2	20	03	08	27	077
	27	2	429	464	15	6	28	02	96	02	1	060	10	6	4			9	2	09	51	10	28	108
	27	2	428	458	18	7	28	02	95	02	1	066	11	6	4		2	7	2	06	51	10	28	115
	27	2	425	452	21	7	31	02	96	02	2	083	12				2	5		17	56	08	31	146
	28	2	420	440	00	8	10	05	96	02	2	080		7	6		2		4	00	52	09	10	131
	28	2	418	435	03	9	02	05	96	03	2	077	11	7	3				7	01	22		25	088
7	9	2	456	425	03	8	09	05	95	43	4	104	15								08	14	09	070

Table 2. (Continued)

Y′Y′	Q	$L_aL_aL_a$	L L L_o	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_fT_fT_f$
7 9	2	457	433	06	2	09	02	96	01	2	094	15	2	1				7	10	04	14	09	139
9	2	459	438	09	2	16	02	97	01	2	110	15	5		4			2	16	02	13	16	140
9	2	461	442	12	4	16	02	98	02	1	105	13					9	7	04	01	13	16	123
9	2	465	443	15	8	10	02	98	02	2	108	12	6			7	9	3	03	02	12	10	101
9	2	469	444	18	8	10	02	97	03	2	116	13	6			3	7	2	08	52	11	10	137
9	2	472	453	21	7	16	02	97	03	3	120	13	4	4		5		2	04	02	12	16	116
10	2	471	456	00	8	13	05	96	02	2	120	12	8	7		2		4	00	02	11	13	093
10	2	480	460	03	8	13	05	96	02	2	130		8	6				4	10	02	11	13	097
10	2	484	459	06	8	12	02	96	02	2	144	10	8					2	14	22	09	12	080
10	2	487	457	09	9	16	02	96	51	5	138	10	9					7	06	04	10	16	074
10	2	491	456	12	9	16	05	95	44	5	141	08						5	03	03	07	16	052
10	2	495	455	15	9	16	05	95	56	5	141	03						4	00	01	07	16	067
10	2	495	460	18	8	13	05	96	21	5	143	07						3	02	14	06	13	055
10	2	495	466	21	9	16	14	95	41	5	162	08	9					2	19	04	09	16	061
11	2	495	473	00	9	16	09	94	57	5	171	09						2	09	01	08	16	079
11	2	497	472	03	8	16	14	96	20	5	180	08	8	6				2	09	01	08	16	072
11	2	499	480	06	7	15	05	96	21	6	210	08	2			7		2	03	00	07	16	080
11	2	503	487	09	7	15	09	96	03	2	196	09	2	5		8		7	16	02	08	15	074
11	2	508	490	12	7	15	02	96	03	2	201	07	6	4			9	3	14	07	07	15	063
11	2	512	482	15	8	16	02	96	02	2	201	08	8			2	9	4	00	00	07	16	078
11	2	515	476	18	7	18	02	96	02	2	194	08	2	3		8		4	07	01	07	18	079
11	2	518	470	21	6	15	09	96	02	2	191	09	2	6		8		7	03	03	09	16	076
12	2	519	468	00	8	18	05	97	02	2	191	11	8	1		5		4	00	03	09	18	082
12	2	521	463	03	8	18	09	97	02	2	174	12	8	4		2		4	17	03	10	18	086
12	2	524	457	06	8	16	09	97	02	2	173	10	7	4		3		7	01	04	09	17	098
12	2	525	450	09	9	16	09	92	41	4	145	09	9					7	28	04	09	17	073
12	2	530	450	12	9	16	09	92	43	4	141	10	9					7	04	02	09	15	094
12	2	534	450	15	9	16	09	92	43	4	180	10	9					7	41	02	10	15	097
12	2	536	455	18	9	16	09	96	02	4	111	10	9					7	69	54	10	16	097

Table 2. (Continued)

Y′Y′		Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_1T_1T_1$
7	12	2	538	461	21	9	21	09	95	40	4	110	10	9					4	01	05	09	21	073
	13	2	539	465	00	9	21	09	94	40	4	110	09	9					4	00	08	09	21	080
	13	2	540	470	03	9	17	14	94	44	4	106	10						2	04	02	09	17	075
	13	2	545	475	06	9	16	09	93	44	4	109	09						2	16	12	10	17	073
	13	2	548	478	09	9	16	09	92	45	4	082	08						7	27	01	08	17	075
	13	2	550	479	12	9	19	09	92	44	4	070	08						7	08	00	07	19	075
	13	2	558	470	15	9	20	09	93	44	4	161	08						7	09	01	07	20	071
	13	2	550	463	18	9	29	05	93	44	4	062	08						3	01	00	04	20	043
	13	2	550	456	21	9	31	05	91	46	4	080	07	9					4	05	03	06	31	054
	14	2	550	442	00	2	25	05	97	28	0	080	07						4	00	00	06	25	056
	14	2	551	441	03	6	25	05	97	02	0	075	09					6	7	05	00	09	25	058
	14	2	555	445	06	2	25	02	97	02	0	079	06	2				1	3	04	28	02	25	034
	14	2	557	447	09	2	25	02	93	41	3	070	06					4	7	09	12	06	25	005
	14	2	560	450	12	7	25	02	93	03	2	065	08	9	5		5	4	3	05	13	05	25	037
	14	2	560	450	15	8	27	02	97	02	2	060	07	8	4				7	05	04	06	27	034
	14	2	560	465	18	9	64	02	92	46	4	070	08	9					2	10	01	07	05	076
	15	2	558	472	03	4	09	02	95	28	4	072	09	4				9	2	02	00	08	09	085
	15	2	559	480	06	8	09	02	96	03	4	070	08	3			5		5	02	56	07	09	087
	15	2	560	488	09	8	09	05	96	02	2	080	08				8			10	53	07	09	084
	15	2	560	490	12	9	05	05	91	41	4	091	07	9					2	10	52	07	06	084
	15	2	560	490	15	9	05	05	91	20	5	080	07						2	09	06	07	06	084
	15	2	561	493	18	9	04	05	93	28	4	082	08				9		2	01	64	07	05	082
	15	2	564	498	21	9	04	02	96	02	4	084	08	9					2	02	56	07	05	085
	16	2	547	506	00	9	14	02	92	46	4	092	09	9					2	06	00	09	14	088
	16	2	570		06	9	09	02	94	42	4	091	10						7	01	01	10	09	090
	16	2	572		09	9	09	05	94	42	4	093	10						7	02	03	10	09	098
	16	2	575		12	9	03	05	93	20	4	100	09						2	07	56	10	05	097
	16	2	575		15	9	03	05	94	20	4	091	09						2	10	02	09	03	080
	16	2	571		18	9	03	05	94	20	4	100	08						5	09	08	08	03	072

Table 2. (Continued)

Y′Y′	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_tT_tT_t$
7 16	2	569		21	2	03	05	97	01	2	097	11					9	7	21	02	09	03	087
17	2	564		00	2	02	05	97	02	0	070	09						7	09	55	08	03	064
17	2	560		03	2	00	05	98	02	0	065	11					8	7	05	03	08	00	090
17	2	558	534	06	0	04	09	98	01	0	060	10						7	05	17	08	04	095
17	2	554	528	09	2	04	09	96	00	0	073	09					8	2	13	03	09	04	090
18	2	551	517	00	6	32	05	97	01	0	083	11			1		9			02	09	32	088
18	2	550	510	03	6	32	05	97	03	0	083	12		2		5	3	4		17	10	32	098
18	2	548	515	06	7	32	05	97	03	2	080	14	7	8				7	03	80	10	32	094
18	2	545	520	09	4	32	05	97	01	1	068	13	3	1		1		7	12	50	10	32	092
18	2	541	527	12	8	34	05	97	01	2	070	11	8	4		5		2	02	01	10	32	096
18	2	549	531	15	1	34	05	96	02	2	066	11						7	04	07	10	32	098
18	2	546	536	18	1	34	05	97	02	2	068	09				4		7		00	09	33	092
19	2	529	545	00	1	36	14	97	02	0	070							2	02	02	10	36	089
19	2	525	540	03	1	36	14	97	02	0	011	11						2	01	12	10	36	098
19	2	525	558	06	1	36	14	97	02	0	076	12	2	2				2	06	20	09	36	112
19	2	525	544	09	0	36	14	97	02	0	079	11	2	2				2	03	07	10	36	117
20	2	525	539	03	8	31	09	97	03	2	143	10	8	6						06	09	31	094
20	2	525	549	06	8	31	05	97	02	2	149	10	8	6				2	06	03	09	31	097
20	2	523	523	09	9	31	05	92	44	4	163	09	9					2	20	54	08	31	102
20	2	523	514	15	9	03	05	93	44	4	161	09	9					7		52	08	03	100
20	2	524	510	18	9	03	05	96	02	2	160	04	9					6	01	60	03	03	091
20	2	519	510	21	9	05	05	96	02	2	157	08	9					6	03	53	05	04	095
21	2	514	510	00	9	09	05	96	41	4	136	09	9					7	21	00	09	09	095
21	2			03	8	10	09	96	03	2	114	11	8	4		2		7	22	01	10	10	096
21	2			06	9	12	09	96	03	2	094	10	7			3		6	20	62	10	11	089
21	2			09	9	04	14	96	02	2	089	09	7			3		6	05	01	09	13	092
21	2			12	9	10	19	95	60	5	070	09	9					7	29	00	09	11	088
21	2			15	9	09	19	93	67	8	083	09							17	52	07	09	094
21	2			18	9	09	19	94	68	6	033	08	7			3		7	20	52	08	09	091

Table 2. (Continued)

Y′Y′	Q	$L_AL_aL_A$	$L_oL_aL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_tT_tT_t$
7 21	2			21	9	07	14	95	66	6	122	09	7					7	11	00	08	08	090
22	2			00	9	09	14	95	41	5	008	09	9					7	14	01	08	09	084
22	2	510	525	03	8	09	05	96	20	5	003	10	8	7				7	15	01	09	09	090
22	2	510	529	06	9	09	05	93	20	4	002	09	8	7				7	01	54	08	09	089
22	2	510	530	15	9	23	02	93	41	5	040	08						1		01	08	23	098
23	2	508	548	03	3	31	02	97	01	0	080	11	1	1		2	6	2	04	02	08	30	095
23	2	504	544	06	4	29	02	97	01	0	114	10	2	6		1		2	06	03	08	29	084
23	2	500	540	09	8			98	02	2	129	10	8	7				2	15	05	09	13	090
23	2			12	8	20	02	93	44	4	120	08						7	09	52	07	20	083
23	2	497	532	15	9	12	02	93	41	4	126	07	9					2	01	53	07	14	082
24	2	496	525	00	9	11	24	93	61	6	951	08	9							00	08	11	083
24	2	495	519	03	9	05	24	93	61	6	913	08	9					6	38	10	07	04	070
24	2	494	511	06	9	02	7	93	64	6	922	08	9					2	09	00	08	04	080
24	2	491	509	09	9	33	24	93	53	6	970	08	9					2	48	02	07	33	072
24	2	486	505	12	9	31	24	93	54	4	025	08	9					2	55	00	07	31	078
24	2	482	502	15	9	21	24	93	51	4	052	08	9					2	27	00	08	31	078
24	2	480	500	18	3	25	09	96	02	5	070	08							18	02	08	27	024
24	2	480	494	21	9	27	14	91	43	4	075	10	9					2	05	00	09	29	092
25	2	480	488	00	0	23	14	98	02	0	072	10						7	03	01	09	23	084
25	2	484	485	03	8	25	09	98	03	6	075	11	8	8				5	03	04	10	25	074
25	2	489	485	06	6	15	05	97	02	2	081	09	4			3	3	2	06	25	09	15	074
25	2	498	482	09	4	27	05	97	02	2	070	09	2	4		1		2		04	09	29	074
25	2	475	489	12	0	23	02	97	02	0	100	10						1	10	08	09		103
25	2	470	489	15	0	36	02	97	02	0	105	10						1	05	00	09		095
25	2	469	489	18	8	31	02	93	03	0	116	09						2	11	66	08	29	098
25	2	466	486	21	9	03	02	92	41	4	120	09						2	04	02	08	03	088
26	2	462	482	00	9	18	02	92	05	2	125	08	9	6				1	05	09	07	18	076
26	2	457	476	03	9	11	05	92	05	2	142	10	9	6				1	17	03	09	11	072
26	2	459	469	06	9	11	05	93	44	2	120	11	9	6				6	22	11	09	11	120

Table 2. (Continued)

Y′Y′	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_fT_fT_f$
7 26	2	459	463	09	9	11	05	93	44	4	118	12	9					9	02	03	09	11	094
26	2	460	460	12	9	15	05	93	51	5	130	10						2	12	54	09	15	121
26	2	459	454	15	9	15	05	93	45	4	124	11						7	06	52	10	15	118
26	2	457	458	18	9	15	05	93	42	4	123	11	9					7	01	01	10	15	104
26	2	457	441	21	9	20	05	93	44	4	132	12	9					2	09	02	12	20	135
27	2	457	435	00	8	20	05	97	01	2	133	14	8	6				2	01	00	06	20	136
27	2	457	429	03	1	16	02	97	02	0	130	17	1				5	7	03	02	15	16	152
27	2	456	423	06	1	16	05	97	02	0	123	16	1			2	7	7	07	26	15	16	136
8 6	2	419	432	18	9	13	05	96	02	×	130	16	6	4		3			04	17	14		143
6	2	421	439	21	9	05	02	91	41	1	134	14	9					2	07	53	12		154
7	2	423	444	00	8	25	02	94	28	2	141	16	8	4				2	01	58	13	25	185
7	2	425	450	03	2	25	02	96	02	1	140	19					6		00	30	17		165
7	2	426	452	06	1	26	05	97	02	1	140	20					6	4	06	36	19		164
7	2	428	457	09	9	23	05	91	44	1	133	17						7	14	44	16		148
7	2	430	463	12	9	36	02	93	44	5	147	13						2	07	00	11	36	131
7	2	431	466	15	0	25	02	97	01	0	140	13						7	01	00	11	25	128
7	2	434	472	18	0	36	02	92	46	0	141	14						2	02	19	11	36	121
7	2	436	476	21	9	27	02	96	02	4	144	11	9					2	11	50	11	27	099
8	2	437	480	00	9	34	02	93	45	6	155	14						2	04	56	13	34	121
8	2	439	485	03	9	00		93	45	6	151							7	00	00	11	00	121
8	2	442	490	06	9	07	02	96	02	4	151	11	9					4	09	56	10	07	173
8	2	444	497	09	9	11	05	93	42	4	160	13	9					2	09	04	11	11	128
8	2	445	500	12	9	13	02	90	45	4	171	12	9					2	00	04	12	13	124
8	2	445	499	15	9	13	05	90	45	4	171	12	9					4	12	00	10	13	121
8	2	448	504	18	9	16	05	94	42	4	159	12						7	17	53	11	16	118
8	2	450	505	21	9	11	05	93	42	4	176	10	9					2	05	20	10	11	112
9	2	453	509	00	8	11	05	96	05	2	171	10	6	4				0	14	02	09	11	079
9	2	456	513	03	7	11	02	97	03	2	175	12	6	4				2	11	41	10	11	079

Table 2. (Continued)

Y′Y′		Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_rT_rT_r$
8	9	2	458	515	06	9	11	02	96	02	2	146	11	6	4				7	01	36	08	11	074
	9	2	461	519	09	9	16	02	92	44	4	145	10	9					4	04	10	07	12	092
	9	2	466	523	12	9	18	05	93	45	4	141	11						8		00	10	18	108
	9	2	468	527	15	9	20	09	94	45	6	130	11						7	04	01	10	20	102
	9	2	471	532	18	9	23	05	94	02	4	141	10	6			4		2	11	06	08	23	095
	9	2	474	534	21	9	23	05	93	44	4	105	11	9					2	36	30	13	23	092
	10	2	477	539	00	9	21	09	94	45	4	099	11						7	06	02	10	21	088
	10	2	480	543	03	9	20	09	93	45	4	082	09						7	17	02	09	20	092
	10	2	484	548	06	9	21	09	92	46	4	071	06						7	11	08	06	20	052
	10	2	487	548	09	9	22	09	93	42	4	058	07	9					7	12	30	07	21	057
	10	2	491	555	12	8	21	09	95	03	2	053	08	8	4		2		7	05	02	07	21	060
	10	2	497	557	15	9	21	09	93	47	4	050	08						7	03	00	07	21	078
	10	2	498	553	18	9	21	09	93	44	4	062	08	9					2	10	62	07	21	087
	10	2	500	548	21	9	31	09	93	44	4	052		9					2	22	20	08	31	072
	11	2	503	544	00	0	27	02	97	02	4	102	09	0					2	20	09	09	27	086
	11	2	506	545	03	9	27	05	92	46	4	106	09						2	04	09	08	27	093
	11	2	510	545	06	5	30	02	92	42	4	121	08					5	2	15	59	07	27	091
	11	2	510	545	12	9	25	05	91	46	4	139	08						2	18	18	08	25	100
	11	2	510	545	15	8	03	02	94	28	4	134	09	8	7				7	05	52	08	03	096
	11	2	510	545	18	9	03	02	96	02	4	145	09	8	7				2	11	57	08	03	093
	12	2	510	545	03	8	07	05	96	03	2	151	10	8	7				2	06	00	09	07	100
	12	2	513	550	06	8	07	05	96	03	2	151	10	8	4		2	9	0	00	03	10	07	105
	12	2	513	550	09	8	13	19	96	03	3	152	11	6	8		2	9	4	00	04	10	13	089
	12	2	513	550	12	8	13	19	96	03	3	143	09	6	8		4	9	5	09	01	08	13	091
	13	2	518	549	03	2	15	19	97	02	0	138	11		4			9	7	05	18	10	13	094
	13	2	519	549	06	8	14	19	97	02	2	131	10				9		6	07	10	10	13	093
	13	2	520	545	09	9	14	19	93	46	4	123	11	9					7	08	00	13	14	108
	13	2	522	545	12	4	14	19	96	02	4	130	10	9					2	07	52	10	14	104
	13	2	521	546	15	9	18	14	95	03	2	111	11	9					7	19	04	09	18	103

Table 2. (Continued)

Y'Y'		Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_iT_iT_i$
8	13	2	521	546	18	8	18	19	95	50	3	101	12	6	7		9		7	10	00	11	18	110
	13	2	520	548	21	8	18	19	96	03	2	096	12	8	4			9	7	05	01	11	18	105
	14	2	520	549	00	6	15	19	97	02	2	096	13	8	3		2				26	11	18	104
	14	2	520	549	03	6	15	19	96	03	2	084	12	5	3		1		7	12	00	11	15	120
	14	2	518	554	09	6	14	19	96	03	2	080	12	1	4			1			16	11	14	104
	14	2	517	555	12	9	14	19	95	03	2	070	12	9	7				7	10	00	10	14	120
	14	2	516	556	15	9	14	19	93	64	2	056	11	9	6				7	14	30	08	14	80
	14	2	516	556	18	9	18	19	93	60	2	060	11	9					2	04	30	11	18	88
	14	2	518	558	21	9	18	09	93	41	2	079	10	9					2	19	06	09	18	92
	15	2	515	558	00	9	22	05	96	02	4	089	10	9	7		2		2	10	13	08	20	085
	15	2	519	557	03	9	21	09	96	02	2	090	11	9	7		2		2	01	53	10	21	100
	15	2	518	557	06	8	18	09	96	03	3	087	11	8	4		0		4	03	01	10	18	112
	15	2	518	557	12	8	21	09	93	51	5	110	10	8	5		2		2	03	01	09	22	113
	15	2	518	557	15	9	21	09	96	50	5	110	11	8	5		2		4	00	55	09	21	110
	16	2	512	554	00	9	29	09	95	45	5	169	10	9							24	09	27	079
	16	2	509	549	03	4	27	09	93	44	4	160	11				5		7	09	52	08	26	107
	16	2			06	6	27	05	96	03	4	161	11	7			5		2	01	00	11	26	107
	16	2	506	546	12	2	27	02	96	02	2	160	11							01	00	09	29	110
	16	2	506	546	18		27	02	96	02	2	156	10	9					7	04	00	10	27	104
	17	2	507	547	00	8	27	02	96	03	3	154	12	2	6		2		4	02	02	11	21	106
	17	2	507	547	03	8	27	02	96	03	3	151	12	2	6				7	03	06	09	27	107
	17	2	507	548	06	8	00	0	97	02	2	154	12	8	1	2			2	03	01	10	00	107
	17	2	507	548	09	8	33	02	97	02	2	161	11	8	1		2		2	07	05	10	30	105
	17	2	507	548	12	8	27	02	96	03	2	170	11	6	7		2		2	09	00	11	27	107
	17	2	507	548	15	7	27	05	96	05	2	188	11						2	02	05	10	27	101
	18	2	507	548	03	5	32	02	97	01	2	182	14				3		7	06	28	11	32	112
	18	2	507	548	12	8	15	02	96	61	2	164	12	8	4		2				01	11	15	107
	18	2	507	548	15	7	18	05	93	03	2	155	11	4	7		5		7	09	00	10	18	104
	19	2	504	544	00	7	18	09	97	02	2	147	11	7	4		5				00	11	18	115

Table 2. (Continued)

Y′Y′	Q	$L_aL_aL_a$	$L_oL_oL_o$	GG	N	dd	ff	VV	ww	W	PPP	TT	N_h	C_L	h	C_M	C_H	a	PP	T_sT_s	T_dT_d	d_wd_w	$T_tT_tT_t$
8 19	2	500	539	03	6	18	09	97	02	1	136	11	7	4		5		7	11	03	10	18	108
19	2	496	535	06	9	20	09	96	03	2	133	10	7	6		2		7	06	51	10	20	096
19	2	495	529	09	9	14	02	93	44	2	133	08	9					4	00	55	08	14	106
19	2	494	524	12	9	18	02	93	46	4	149	09						2	04	16	09	18	104
19	2	490	522	15	9	14	05	93	46	4	121	09				2		7	28	56	09	14	117
19	2	487	517	18	9	14	09	96	02	4	110	11	7	6		2		7	11	14	11	14	122
19	2	483	512	21	8	09	09	96	02	2	111	12	8	4				4	00	01	12	09	119
20	2	477	503	03	8	09	05	97	02	2	092	11	8	6						04	09	09	065
20	2	473	498	06	9	09	05	96	02	2	081	10	9	6				7	09	11	09	09	089
20	2	471	493	09	8	09	24	96	02	2	067	11	8	4				7	14	54	10	09	123
20	2	470	489	12	8	07	24	96	67	2	058	12	8	4				7	09	56	11	07	152
20	2	468	483	15	8	07	24	95	67	6	031	11	8	4		2		7	27	52	11	07	122
20	2	468	476	18	9	07	24	94	65	6	024	11	9	7		2		7	07	56	11	07	118
20	2	468	469	21	8	07	24	94	03	2	022	13	8	4				4	09	53	11	09	143
21	2	464	462	00	8	09	19	97	02	2	021	13	8	7		2		8	01	52	12	09	143
21	2	463	461	03	8	09	14	97	02	2	021	15	8	6				4	00	00	13	09	140
21	2	459	456	06	9	36	14	94	42	6	025	15	9	6				2	04	02	13	07	143
21	2	455	452	09	9	30	09	94	44	2	044	13	9					2	02	53	13	30	150
21	2	453	448	12	8	29	14	97	02	2	068	14	8	4				2	24	52	13	29	145
21	2	450	445	15	8	29	14	97	02	2	088	15	4					2	20	00	14	29	153
21	2	451	439	18	5	28	09	97	02	2	090		4	4				2	02	52	14	29	156
21	2	453	434	21	6	30	09	97	02	2	101	14	4	4				2	09	52		29	148

8. Data on Temperature and Salinity, and Computed Data on Dynamic Depth

(温度塩分記録及ダイナミックデプス計算値)

Double titration for chlorinity determination, calculation of depths, interpolation of data, and computation of dynamic depth were made by H. Koto and Y. Akiba.

Code of the World Meteorological Organization

dd: Wind direction
ff: Wind speed
ww: Present weather
TTT: Air temperature

Abbreviations

Tr: Transparency of water in meters as represented by Secchi's disc reading
C: Colour of sea
X: No observation

Table 3. Data on temperature, salinity and dynamic depth in 1958 cruise 4 to the North Pacific and the Okhotsk Sea

I. First cruise

Station Ho 1 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2115-2400	13	5	1958	42°00′N	144°00′E	23	04	02	05	SW 3	SW 2	4	8

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		0.9	18.07	32.65	0	0.9	18.07	32.65	26.18	185	0
10	12	1.67	18.07	32.65	10	1.67	18.07	32.65	26.13	190	0.019
20	〃	1.65	18.07	32.65	20	1.65	18.07	32.65	26.13	190	0.038
29	〃	1.59	18.07	32.65	30	1.59	18.07	32.65	26.14	189	0.057
49	12	2.81	18.23	32.94	50	2.80	18.23	32.94	26.28	175	0.093
73	〃	0.71	18.29	33.04	75	0.69	18.29	33.04	26.52	153	0.134
98	〃	0.53	18.32	33.10	100	0.52	18.32	33.10	26.57	148	0.172
147	〃	0.74	18.40	33.24	150	0.76	18.40	33.24	26.67	138	0.243
188	22	0.86	18.43	33.30	200	0.89	18.43	33.30	26.71	135	0.312
287	〃	1.36	18.49	33.40	300	2.47	18.51	33.44	26.71	135	0.448
386	〃	2.40	18.68	33.75	400	2.44	18.70	33.78	26.98	109	0.571
477	〃	2.50	18.78	33.93	500	2.55	18.79	33.95	27.11	97	0.676
578	19	2.83	18.80	33.96	600	2.88	18.81	33.98	27.11	97	0.777
770	〃	2.97	18.88	34.11	800	2.95	18.89	34.13	27.22	86	0.969
963	〃	2.70	18.91	34.16	1000	2.69	18.92	34.18	27.28	80	1.147
1158	〃	2.66	19.00	34.33							

Table 3. (Continued)

Station Ho 2 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0930-1218	14	5	1958	42°00′N	146°00′E	21	06	01	064	SW 3	SW 3	3	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		2.1	18.30	33.06	0	2.1	18.30	33.06	26.44	160	0
10	20	1.54	18.29	33.04	10	1.54	18.29	33.04	26.47	157	0.016
19	〃	1.46	18.31	33.08	20	1.45	18.31	33.08	26.50	154	0.032
28	〃	1.44	18.31	33.08	30	1.43	18.31	33.08	26.50	154	0.047
47	〃	1.38	18.32	33.10	50	1.38	18.32	33.10	26.52	153	0.078
71	20	1.37	18.32	33.10	75	1.31	18.32	33.10	26.52	153	0.116
94	〃	0.69	18.32	33.10	100	0.68	18.33	33.12	26.58	147	0.153
141	〃	0.67	18.37	33.19	150	0.71	18.37	33.19	26.63	142	0.225
153	37	0.76	18.37	33.19	200	1.27	18.44	33.31	26.70	135	0.294
235	〃	1.70	18.51	33.44	300	2.47	18.61	33.62	26.85	121	0.423
318	〃	2.57	18.63	33.66	400	2.39	18.70	33.78	26.99	108	0.539
400	〃	2.39	18.70	33.78	500	2.53	18.76	33.89	27.06	101	0.646
487	46	2.49	18.75	33.87	600	2.95	18.84	34.04	27.14	94	0.747
670	〃	3.13	18.90	34.15	800	2.99	18.94	34.22	27.29	80	0.930
853	〃	2.93	18.95	34.24	1000	2.75	18.97	34.27	27.35	74	1.095
1038	〃	2.70	18.98	34.29							

Station Ho 3 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2115-2225	14	5	1958	42°00′N	148°18′E	13	05	00	063	WSW 1	WSW 1	4	9

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		5.5	18.43	33.30	0	5.5	18.43	33.30	26.29	174	0
10	3	5.44	18.44	33.31	10	5.44	18.44	33.31	26.31	173	0.017
20	〃	5.45	18.40	33.24	20	5.45	18.40	33.24	26.25	178	0.035
30	〃	5.43	18.42	33.28	30	5.43	18.42	33.28	26.28	175	0.053
50	6	6.25	18.69	33.77	50	6.25	18.69	33.77	26.57	148	0.085
75	〃	5.66	18.61	33.62	75	5.66	18.61	33.62	26.52	153	0.123
100	〃	4.10	15.57	33.55	100	4.10	18.57	33.55	26.54	151	0.161
150	〃	3.47	18.55	33.51	150	3.47	18.55	33.51	26.68	137	0.234
194	13	3.32	18.61	33.62	200	3.31	18.61	33.62	26.78	128	0.301
291	〃	3.08	18.59	33.59	300	3.07	18.60	33.60	26.79	127	0.430
388	〃	3.01	18.78	33.93	400	3.01	18.79	33.95	27.05	102	0.547
483	21	3.02	18.84	34.04	500	2.02	18.83	34.02	27.12	96	0.649
580	〃	2.99	18.90	34.15	600	2.98	18.91	34.16	27.24	84	0.743

Table 3. (Continued)

Station Ho 4 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0628–0745	15	5	1958	42°00′N	150°00′E	13	02	44	060	SW 1	S 3	4	8

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5 \triangle st$	$\triangle D$
0		4.5	18.33	33.12	0	4.5	18.33	33.12	26.25	178	0
10	10	3.69	18.25	32.97	10	3.69	18.25	32.95	26.23	180	0.018
20	〃	3.65	18.33	33.12	20	3.65	18.33	33.12	26.34	170	0.035
30	〃	3.67	18.34	33.13	30	3.67	18.34	33.13	26.35	169	0.052
50	7	3.71	18.34	33.13	50	3.71	18.34	33.13	26.35	169	0.086
74	〃	1.91	18.34	33.13	75	1.90	18.34	33.13	26.51	154	0.127
99	〃	2.24	18.43	33.30	100	2.25	18.43	33.30	26.61	144	0.164
149	〃	2.76	18.52	33.46	150	2.77	18.52	33.46	26.70	135	0.234
195	13	2.58	18.62	33.64	200	2.58	18.63	33.66	26.87	119	0.298
292	〃	3.09	18.72	33.82	300	3.14	18.73	33.84	26.97	110	0.414
391	〃	3.25	18.81	33.98	400	3.23	18.82	34.00	27.09	98	0.520
470	20	3.08	18.86	34.07	500	3.04	18.87	34.09	27.18	90	0.617
564	〃	3.01	18.90	34.15	600	(2.99)	(18.91)	(34.16)	(27.24)	(84)	0.708

Station Ho 5 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0537–0710	16	5	1958	42°00′N	152°00′E	15	09	45	060	SE 2	SE 2	4	11

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5 \triangle st$	$\triangle D$
0		3.3	18.27	33.01	0	3.3	18.27	33.01	26.29	174	0
10	11	2.75	18.26	32.99	10	2.75	18.26	32.99	26.32	172	0.017
20	〃	2.58	18.26	32.99	20	2.58	18.26	32.99	26.34	170	0.034
29	〃	2.55	18.26	32.99	30	2.55	18.26	32.99	26.34	170	0.051
49	〃	4.47	18.44	33.31	50	4.48	18.44	33.31	26.42	162	0.085
74	11	1.86	18.34	33.13	75	1.82	18.34	33.13	26.52	153	0.124
91	25	3.97	18.50	33.42	100	3.65	18.49	33.40	26.57	148	0.162
136	〃	1.12	18.41	33.26	150	1.60	18.45	33.33	26.69	136	0.233
153	40	1.67	18.46	33.35	200	2.00	18.60	33.60	26.87	119	0.297
230	〃	2.08	18.68	33.75	300	3.13	18.77	33.91	27.03	104	0.410
306	〃	3.20	18.78	33.93	400	3.28	18.80	33.96	27.05	102	0.515
436	36	3.25	18.81	33.98	500	3.18	18.88	34.11	27.18	90	0.614
529	〃	3.10	18.92	34.18							

Table 3. (Continued)

Station Ho 6 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0600–0710	17	5	1958	41°32′N	154°00′E	02	14	01	070	N 3	N 4	4	12

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		8.9	18.85	34.05	0	8.6	18.85	34.05	26.42	162	0
10	7	8.98	18.89	34.13	10	8.98	18.89	34.13	26.46	158	0.016
20	〃	8.97	18.86	34.07	20	8.97	18.86	34.07	26.42	162	0.032
30	〃	8.96	18.87	34.09	30	8.96	18.87	34.09	26.43	161	0.048
50	〃	8.81	18.88	34.11	50	8.81	18.88	34.11	26.47	157	0.080
68	25	8.24	18.89	34.13	75	8.20	18.88	34.11	26.56	149	0.119
91	〃	8.12	18.87	34.09	100	8.07	18.87	34.09	26.56	149	0.156
132	28	7.94	18.88	34.11	150	7.91	18.87	34.09	26.59	146	0.231
183	24	7.87	18.86	34.07	200	7.86	18.86	34.07	26.59	146	0.306
275	〃	7.85	18.86	34.07	300	7.55	18.85	34.05	26.62	143	0.455
370	〃	5.46	18.80	33.96	400	5.05	18.79	33.95	26.85	121	0.592
470	28	4.36	18.80	33.96	500	4.22	18.81	33.98	26.97	110	0.712
566	〃	4.06	18.85	34.05	600	(4.00)	(18.87)	34.09	27.08	99	0.821

Station Ho 7 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1740–1850	17	5	1958	41°50′N	156°00′E	05	05	25	050	NE 1	N 2	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		8.5	18.86	34.07	0	8.5	18.86	34.07	26.49	155	0
10	7	8.76	18.86	34.07	10	8.76	18.86	34.07	26.45	159	0.016
20	13	8.77	18.86	34.07	20	8.77	18.86	34.07	26.45	159	0.032
30	17	8.72	18.87	34.09	30	8.72	18.87	34.09	26.47	157	0.048
50	〃	8.75	18.87	34.09	50	8.75	18.87	34.09	26.47	157	0.079
72	〃	8.73	18.87	34.09	75	8.71	18.87	34.09	26.48	156	0.119
93	〃	8.52	18.87	34.09	100	7.45	18.87	34.09	26.65	140	0.156
143	17	8.02	18.91	34.16	150	7.95	18.91	34.16	26.64	141	0.228
257	21	6.74	18.84	34.04	200	7.40	18.89	34.09	26.70	135	0.299
355	〃	5.01	18.74	33.86	300	6.00	18.79	33.95	26.74	132	0.436
454	〃	4.61	18.75	33.87	400	4.80	18.73	33.84	26.80	126	0.569
489	12	4.22	18.78	33.93	500	4.17	18.79	33.95	26.95	112	0.692
587	〃	3.87	18.82	34.00	600	3.83	18.82	34.00	27.02	105	0.805

Table 3. (Continued)

Station Ho 8 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0500-0545	18	5	1958	42°17′N	158°00′E	08	02	01	060	E 1	NNE 1	4	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		8.8	18.85	34.05	0	8.8	18.85	34.05	26.43	161	0
10	0	8.60	18.85	34.05	10	8.60	18.85	34.05	26.46	158	0.016
20	〃	8.59	18.85	34.05	20	8.59	18.85	34.05	26.46	158	0.032
30	〃	8.60	18.85	34.05	30	8.60	18.85	34.05	26.46	158	0.048
50	〃	8.54	18.85	34.05	50	8.54	18.85	34.05	26.47	157	0.080
75	5	8.57	18.85	34.05	75	8.57	18.85	34.05	26.46	158	0.119
100	〃	8.36	18.83	34.02	100	8.36	18.83	34.02	26.47	157	0.159
149	〃	8.07	18.84	34.04	150	8.06	18.84	34.04	26.53	152	0.278
197	10	7.34	18.79	33.95	200	7.30	18.78	33.93	26.55	150	0.315
295	〃	6.19	18.76	33.89	300	6.13	18.76	33.89	26.69	136	0.462
394	〃	4.44	18.74	33.86	400	4.40	18.74	33.86	26.85	121	0.594
497	7	4.02	18.75	33.87	500	4.00	18.75	33.87	26.91	116	0.716
596	〃	3.81	18.85	34.05	600	3.81	18.86	34.07	27.09	98	0.828

Station Ho 9 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2215-2326	18	5	1958	43°30′N	158°00′E	35	14	03	030	NW 2	NW 2	4	15

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		5.9	18.55	33.51	0	5.9	18.55	33.51	26.41	163	0
9	24	5.88	18.56	33.53	10	5.88	18.56	33.53	26.43	161	0.016
18	〃	5.94	18.57	33.55	20	5.94	18.57	33.55	26.43	161	0.032
27	〃	5.95	18.58	33.57	30	5.96	18.58	33.57	26.45	159	0.048
46	〃	6.00	18.60	33.60	50	5.99	18.60	33.60	26.47	157	0.080
66	28	5.97	18.60	33.60	75	6.00	18.60	33.60	26.47	157	0.126
88	〃	6.08	18.60	33.60	100	6.10	18.61	33.62	26.48	156	0.173
129	〃	6.02	18.66	33.71	150	4.20	18.56	33.53	26.62	143	0.248
148	50	4.26	18.56	33.53	200	5.00	18.68	33.75	26.70	135	0.319
227	〃	5.30	18.72	33.82	300	4.34	18.74	33.86	26.86	120	0.449
304	〃	4.27	18.75	33.87	400	3.78	18.83	34.00	27.05	102	0.563
350	52	3.78	18.79	33.95							
432	〃	3.78	18.86	34.07							

Table 3. (Continued)

Station Ho 10 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1000-1120	19	5	1958	45°00′N	158°00′E	26	09	01	050	W 2	WSW 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		2.1	18.27	33.01	0	2.1	18.27	33.01	26.40	164	0
10	11	2.16	18.30	33.06	10	2.16	18.30	33.06	26.43	161	0.016
20	〃	2.17	18.31	33.08	20	2.17	18.31	33.08	26.45	159	0.032
29	〃	2.15	18.31	33.08	30	2.15	18.31	33.88	26.45	159	0.048
49	〃	1.97	18.31	33.08	50	1.96	18.31	33.08	26.46	158	0.080
67	26	1.90	18.31	33.08	75	1.89	18.31	33.08	26.47	157	0.120
90	〃	1.86	18.31	33.08	100	1.80	18.32	33.10	26.49	155	0.159
135	〃	1.32	18.33	33.12	150	1.34	18.36	33.17	26.58	147	0.235
164	40	1.42	18.41	33.26	200	2.07	18.56	33.53	26.81	125	0.303
247	〃	3.04	18.72	33.82	300	3.21	18.80	33.96	27.06	101	0.418
328	〃	3.28	18.82	34.00	400	3.27	18.86	34.07	27.14	94	0.518
457	44	3.23	18.88	34.11	500	3.16	18.90	34.15	27.21	87	0.611
549	〃	3.08	18.92	34.18							

Station Ho 11 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2120-2240	19	5	1958	44°33′N	156°10′E	25	09	03	035	WSW 2	WSW 1	4	12

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	10^5 st	D
0		2.3	18.32	33.10	0	2.3	18.32	33.10	26.45	159	0
10	10	2.03	18.32	33.10	10	2.03	18.32	33.10	26.47	157	0.016
20	〃	2.04	18.32	33.10	20	2.04	18.32	33.10	26.47	157	0.032
30	〃	2.02	18.32	33.10	30	2.02	18.32	33.10	26.47	157	0.047
49	〃	1.94	18.33	33.12	50	1.93	18.33	33.12	26.50	154	0.078
72	15	1.50	18.34	33.13	75	1.46	18.34	33.13	26.54	151	0.117
97	〃	1.19	18.38	33.21	100	1.17	18.38	33.21	26.62	143	0.153
145	〃	1.28	18.40	33.24	150	1.55	18.45	33.33	26.69	136	0.223
163	36	2.42	18.59	33.59	200	2.63	18.66	33.71	26.91	116	0.287
245	〃	2.90	18.72	33.82	300	3.20	18.78	33.93	27.03	104	0.399
328	〃	3.34	18.80	33.96	400	3.32	18.86	34.07	27.14	94	0.500
460	39	3.22	18.89	34.13	500	3.14	18.90	34.15	27.21	87	0.593
553	〃	3.06	18.91	34.16							

Table 3. (Continued)

Station Ho 12 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1030-1130	20	5	1958	44°03′N	154°18′E	26	05	02	030	0	SSE 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		2.6	18.31	33.08	0	2.6	18.31	33.08	26.41	163	0
10	0	1.76	18.31	33.08	10	1.76	18.31	33.08	26.47	157	0.016
20	〃	1.65	18.31	33.08	20	1.65	18.31	33.08	26.48	156	0.032
30	〃	1.47	18.32	33.10	30	1.47	18.32	33.10	26.51	154	0.047
50	〃	1.12	18.32	33.10	50	1.12	18.32	33.10	26.54	151	0.078
74	8	0.97	18.35	33.15	75	0.96	18.35	33.15	26.59	146	0.115
99	〃	0.86	18.38	33.21	100	0.86	18.38	33.21	26.64	141	0.151
149	〃	2.47	18.57	33.55	150	2.49	18.57	33.55	26.80	126	0.218
198	7	2.97	18.68	33.75	200	2.98	18.68	33.75	26.91	116	0.279
297	〃	3.28	18.81	33.98	300	3.28	18.81	33.98	27.07	100	0.389
396	〃	3.26	18.86	34.07	400	3.25	18.86	34.07	27.14	94	0.488
495	10	3.03	18.88	34.11	500	3.03	18.88	34.11	27.20	88	0.582
594	〃	3.03	18.94	34.22	600	3.03	18.94	34.22	27.28	80	0.670

Station Ho 13 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2100-2155	20	5	1958	43°30′N	152°30′E	20	05	45	045	SSE 1	SSW 1	4	20

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		3.3	18.25	32.97	0	3.3	18.25	32.97	26.26	177	0
10	4	3.07	18.28	33.03	10	3.07	18.28	33.03	26.32	172	0.018
20	〃	2.50	18.25	32.97	20	2.50	18.25	32.97	26.33	171	0.035
30	〃	2.33	18.28	33.03	30	2.33	18.28	33.03	26.39	165	0.052
50	〃	2.06	18.27	33.01	50	2.06	18.27	33.01	26.40	164	0.085
73	12	1.93	18.29	33.04	75	1.91	18.29	33.04	26.44	160	0.125
98	〃	1.50	18.32	33.10	100	1.49	18.32	33.10	26.51	154	0.164
147	〃	1.12	18.40	33.24	150	1.12	18.41	33.26	26.67	138	0.237
195	13	2.97	18.67	33.73	200	3.00	18.68	33.75	26.91	116	0.331
292	〃	3.20	18.82	34.00	300	3.20	18.82	34.00	27.10	98	0.440
390	〃	3.14	18.87	34.09	400	3.14	18.87	34.09	27.17	91	0.537
492	〃	3.10	18.90	34.14	500	3.09	18.90	34.14	27.22	86	0.628
591	〃	2.99	18.92	34.18	600	2.98	18.92	34.18	27.25	83	0.716

Table 3. (Continued)

Station Ho 14 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0910-1000	21	5	1958	45°00′N	151°53′E	29	02	58	040	0	NE 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\Delta st$	ΔD
0		2.3	18.27	33.01	0	2.3	18.27	33.01	26.37	167	0
10	0	1.85	18.39	33.22	10	1.85	18.39	33.22	26.58	147	0.016
20	〃	1.57	18.37	33.19	20	1.57	18.37	33.19	26.57	148	0.031
30	〃	1.48	18.40	33.24	30	1.48	18.40	33.24	26.63	142	0.045
50	〃	1.30	18.38	33.21	50	1.30	18.38	33.21	26.61	144	0.074
75	2	1.24	18.39	33.22	75	1.24	18.39	33.22	26.63	142	0.109
100	〃	1.09	18.40	33.24	100	10.9	18.40	33.24	26.65	140	0.145
150	〃	1.06	18.40	33.24	150	1.06	18.40	33.24	26.65	140	0.215
198	9	1.38	18.49	33.40	200	1.39	18.49	33.40	26.76	130	0.282
296	〃	1.58	18.52	33.46	300	1.58	18.52	33.46	26.78	128	0.412
395	〃	1.63	18.52	33.46	400	1.63	18.52	33.46	26.78	128	0.541
495	6	1.71	18.56	33.53	500	1.72	18.56	33.53	26.84	122	0.668
594	〃	1.90	18.61	33.62	600	1.91	18.61	33.62	26.90	117	0.790

Station Ho 15 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1920-2024	21	5	1958	44°39′N	150°17′E	29	02	00	030	N 1	SSE 1	5	10

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\Delta st$	ΔD
0		3.1	18.29	33.04	0	3.1	18.29	33.04	26.34	170	0
10	0	2.35	18.32	33.10	10	2.35	18.32	33.10	26.45	159	0.017
20	〃	1.21	18.32	33.10	20	1.82	18.32	33.10	26.48	156	0.032
30	〃	1.64	18.32	33.10	30	1.64	18.32	33.10	26.50	154	0.048
50	〃	1.30	18.35	33.15	50	1.30	18.35	33.15	26.56	149	0.078
75	〃	0.97	18.35	33.15	75	0.97	18.35	33.15	26.58	147	0.115
100	〃	0.90	18.35	33.15	100	0.90	18.35	33.15	26.60	145	0.152
150	〃	1.86	18.51	33.44	150	1.86	18.51	33.44	26.76	130	0.221
199	7	2.41	18.59	33.59	200	2.42	18.59	33.59	26.83	123	0.281
299	5	3.12	18.70	33.78	300	3.12	18.70	33.78	26.93	114	0.404
399	〃	3.13	18.82	34.00	400	3.13	18.82	34.00	27.10	98	0.512
496	7	3.08	18.87	34.09	500	3.08	18.87	34.09	27.18	90	0.609
595	〃	2.99	18.92	34.18	600	2.99	18.92	34.18	27.25	83	0.699

Table 3. (Continued)

Station Ho 16 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0600-0716	22	5	1958	43°33′N	149°23′E	18	02	03	070	SE 1	SE 3	4	15

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		6.0	18.27	33.01	0	6.0	18.27	33.01	26.00	202	0
10	7	4.85	18.30	33.06	10	4.85	18.30	33.06	26.17	186	0.019
20	〃	4.06	18.36	33.17	20	4.06	18.36	33.17	26.34	170	0.037
30	〃	3.63	18.36	33.17	30	3.63	18.36	33.17	26.39	165	0.054
50	〃	3.44	18.36	33.17	50	3.44	18.36	33.17	26.41	163	0.087
73	14	1.54	18.36	33.17	75	1.48	18.36	33.17	26.57	148	0.126
93	〃	0.90	18.37	33.19	100	0.84	18.38	33.21	26.64	141	0.162
144	〃	1.87	18.52	33.46	150	1.93	18.53	33.48	26.78	128	0.230
197	〃	2.37	18.62	33.64	200	2.39	18.62	33.64	26.87	119	0.292
296	〃	2.86	18.75	33.87	300	2.88	18.76	33.89	27.03	104	0.405
395	〃	3.48	18.86	34.07	400	3.48	18.86	34.07	27.12	96	0.507
489	13	3.13	18.89	34.13	500	3.13	18.90	34.15	27.21	87	0.601
587	〃	3.14	18.94	34.22	600	3.14	18.95	34.24	72.29	80	0.688

Station Ho 17 (1st)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0100-0220	23	5	1958	43°01′N	147°38′E	15	09	45	065	SE 3	SE 2	5	15

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		4.1	18.29	33.04	0	4.1	18.29	33.04	26.24	179	0
9	20	3.97	18.28	33.03	10	3.97	18.28	33.03	26.24	179	0.018
19	〃	2.50	18.30	33.06	20	2.47	18.30	33.06	26.41	163	0.035
28	〃	2.25	18.30	33.06	30	2.23	18.30	33.06	26.43	161	0.051
47	〃	2.04	18.30	33.06	50	1.90	18.30	33.06	26.45	159	0.083
61	35	1.40	18.31	33.08	75	1.05	18.35	33.15	26.59	146	0.121
82	〃	0.94	18.35	33.15	100	0.68	18.35	33.15	26.60	145	0.158
123	〃	0.60	18.35	33.15	150	1.25	18.44	33.31	26.70	135	0.228
130	52	0.88	18.40	33.24	200	2.02	18.66	33.71	26.96	111	0.290
192	〃	1.93	18.64	33.68	300	2.81	18.78	33.93	27.07	100	0.397
262	〃	2.61	18.76	33.89	400	3.13	18.83	34.02	27.11	97	0.498
366	59	3.07	18.81	33.98	500	3.22	18.88	34.11	27.18	90	0.594
458	〃	3.20	18.87	34.09							

Table 3. (Continued)

II. Second cruise

Station Ho 1 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1300-1423	10	6	1958	47°30′N	155°00′E	13	02	01	050	SE 2	SE 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		3.5	18.32	33.10	0	3.5	18.32	33.10	26.34	170	0
10	5	3.06	18.32	33.10	10	3.06	18.32	33.10	26.34	170	0.017
20	〃	3.06	18.32	33.10	20	3.06	18.32	33.10	26.34	170	0.034
30	〃	2.62	18.33	33.12	30	2.62	18.33	33.12	26.44	160	0.051
50	〃	1.90	18.35	33.15	50	1.90	18.35	33.15	26.52	153	0.082
75	9	1.07	18.37	33.19	75	1.07	18.37	33.19	26.61	144	0.119
99	〃	0.76	18.38	33.21	100	0.75	18.38	33.21	26.64	141	0.155
149	〃	2.22	18.60	33.60	150	2.24	18.60	33.61	26.86	120	0.221
190	20	2.98	18.72	33.82	200	3.04	18.74	38.85	27.00	107	0.279
287	〃	3.34	18.83	34.02	300	3.36	18.84	34.04	27.10	98	0.384
384	〃	3.42	18.89	34.12	400	3.40	18.90	34.14	27.18	90	0.480
480	〃	3.25	18.97	34.27	500	3.23	18.97	34.27	27.30	79	0.567
578	23	3.14	18.97	34.27	600	3.09	18.98	34.28	27.33	76	0.648
773	〃	2.83	19.02	34.36	800	2.79	19.03	34.37	27.43	66	0.799
969	〃	2.55	19.06	34.43	1000	2.50	19.06	34.43	27.50	66	0.935
1165	〃	2.36	19.09	34.49	1200	(2.29)	(19.10)	(34.50)	27.58	52	1.058

Station Ho 2 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2330-0030	10	6	1958	47°30′N	157°00′E	14	05	03	033	SE 1	SE 1	3	17

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		3.6	18.32	33.10	0	3.6	18.32	33.10	26.33	171	0
10	0	3.34	18.31	33.08	10	3.34	18.31	33.08	26.34	170	0.017
20	〃	3.20	18.31	33.08	20	3.20	18.31	33.08	26.36	168	0.034
30	〃	2.74	18.31	33.08	30	2.74	18.31	33.08	26.40	164	0.051
50	〃	2.22	18.32	33.10	50	2.22	18.32	33.10	26.46	158	0.083
75	3	1.49	18.33	33.12	75	1.49	18.33	33.12	26.52	153	0.122
100	〃	1.09	18.36	33.17	100	1.09	18.36	33.17	26.60	145	0.159
150	〃	1.82	18.52	33.46	150	1.82	18.52	33.86	26.77	130	0.228
199	7	3.26	18.75	33.87	200	3.25	18.75	33.87	26.98	111	0.288
298	〃	3.41	18.85	34.05	300	3.41	18.85	34.05	27.11	100	0.394
397	〃	3.32	18.93	34.20	400	3.22	18.93	34.20	27.24	86	0.487
496	〃	3.05	18.96	34.25	500	3.04	18.96	34.25	27.31	81	0.571
589	12	2.94	18.98	34.29	600	2.93	18.99	34.30	27.36	77	0.650
787	〃	2.76	19.03	34.38	800	2.75	19.04	34.39	27.45	69	0.796
985	〃	2.50	19.07	34.45	1000	2.48	19.08	34.46	27.53	62	0.927
1183	〃	2.29	19.10	34.51	1200	2.27	19.11	34.52	27.59	56	1.045

Table 3. (Continued)

Station Ho 3 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0845-0903	11	6	1958	47°28′N	159°00′E	09	02	02	034	ENE 1	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		3.8	18.35	33.15	0	3.8	18.35	33.15	26.35	169	0
10	5	3.67	18.34	33.13	10	3.67	18.34	33.13	26.35	169	0.017
20	〃	3.24	18.34	33.13	20	3.24	18.34	33.13	26.40	164	0.034
30	〃	2.33	18.34	33.13	30	2.33	18.34	33.13	26.48	156	0.050
50	〃	2.19	18.34	33.13	50	2.19	18.34	33.13	26.49	155	0.081
75	9	1.22	18.36	33.17	75	1.22	18.36	33.17	26.59	146	0.119
99	〃	0.81	18.40	33.24	100	0.80	18.80	33.24	26.67	138	0.155
149	〃	3.08	18.69	33.77	150	3.06	18.69	33.77	26.92	115	0.219
199	5	3.43	18.76	33.89	200	3.44	18.76	33.89	26.98	109	0.276
299	〃	3.40	18.87	34.09	300	3.40	18.87	34.09	27.14	94	0.380
398	〃	3.30	18.92	34.18	400	3.30	18.92	34.18	27.22	86	0.473
498	〃	3.13	18.96	34.26	500	3.13	18.96	34.26	27.30	79	0.558
591	10	3.01	18.99	34.31	600	3.00	18.99	34.31	27.35	74	0.638
788	〃	2.75	19.03	34.38	800	2.73	19.03	34.38	27.43	66	0.787
985	〃	2.55	19.07	34.45	1000	2.53	19.07	34.45	27.51	59	0.923
1182	〃	2.30	19.10	34.50	1200	2.28	19.10	34.50	27.58	52	1.046

Station Ho 4 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1855-2010	11	6	1958	47°30′N	161°00′E	09	05	03	035	E 1	×	×	18

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		4.1	18.31	33.08	0	4.1	18.31	33.08	26.27	176	0
10	5	4.04	18.31	33.08	10	4.04	18.31	33.08	26.28	175	0.018
20	〃	3.46	18.31	33.08	20	3.46	18.31	33.08	26.33	171	0.035
30	〃	3.11	18.32	33.10	30	3.11	18.32	33.10	26.38	166	0.052
50	〃	2.58	18.32	33.10	50	2.58	18.32	33.10	26.43	161	0.085
74	11	2.19	18.32	33.10	75	2.17	18.32	33.10	26.46	158	0.125
98	〃	1.42	18.33	33.12	100	1.41	18.33	33.12	26.53	152	0.164
148	〃	1.14	18.42	33.28	150	1.14	18.43	33.29	26.69	136	0.236
192	16	3.05	18.70	33.78	200	3.16	18.71	33.80	26.93	114	0.299
288	〃	3.40	18.84	34.04	300	3.40	18.85	34.06	27.11	97	0.407
385	〃	3.40	18.92	34.18	400	3.39	18.93	34.19	27.23	85	0.501
481	〃	3.19	18.95	34.23	500	3.17	18.95	34.24	27.28	80	0.586
578	20	3.09	18.98	34.29	600	3.06	18.99	34.30	27.35	74	0.667
774	〃	2.80	19.02	34.36	800	2.77	19.03	34.37	23.43	66	0.816
970	〃	2.54	19.07	34.45	1000	2.50	19.08	34.46	27.53	57	0.949
1167	〃	2.31	19.10	34.51	1200	2.27	19.11	(34.52)	27.59	51	1.067

Table 3. (Continued)

Station Ho 5 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0440–0550	12	6	1958	47°34′N	163°00′E	06	05	02	050	ENE 3	×	×	8

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	10^5 st	D
0		5.4	18.34	33.13	0	5.4	18.34	33.13	26.17	186	0
10	6	5.04	18.33	33.12	10	5.04	18.33	33.12	26.20	183	0.018
20	11	3.88	18.32	33.10	20	3.88	18.32	33.10	26.31	173	0.036
30	6	3.20	18.35	33.15	30	3.20	18.35	33.15	26.41	163	0.053
50	〃	3.00	18.37	33.19	50	3.00	18.37	33.19	26.46	158	0.085
74	11	2.94	18.37	33.19	75	2.94	18.37	33.19	26.47	157	0.125
98	10	2.93	18.39	33.22	100	2.94	18.39	33.22	26.50	154	0.164
148	11	3.93	18.54	33.49	150	3.94	18.54	33.50	26.62	143	0.239

Station Ho 6 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2340–0034	12	6	1958	47°33′N	165°00′E	10	05	02	035	ESE 3	SW 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	10^5 st	D
0		4.5	18.32	33.10	0	4.5	18.32	33.10	26.24	179	0
10	5	4.22	18.32	33.10	10	4.22	18.32	33.10	26.28	175	0.018
20	〃	4.08	18.32	33.10	20	4.08	18.32	33.10	26.29	174	0.035
30	〃	3.22	18.32	33.10	30	3.22	18.32	33.10	26.35	169	0.052
50	〃	2.71	18.32	33.10	50	2.71	18.32	33.10	26.42	162	0.085
74	10	1.93	18.32	33.10	75	1.92	18.32	33.10	26.48	156	0.125
98	〃	1.70	18.32	33.10	100	1.68	18.32	33.10	26.50	154	0.164
148	〃	1.32	18.42	33.28	150	1.31	18.43	33.29	26.68	137	0.237
197	10	2.62	18.65	33.69	200	2.65	18.65	33.70	26.90	117	0.301
295	〃	3.10	18.78	33.93	300	3.12	18.79	33.94	27.05	102	0.412
394	〃	3.26	18.88	34.11	400	3.26	18.89	34.12	27.17	91	0.510
492	〃	3.20	18.93	34.20	500	3.18	18.94	34.21	27.26	82	0.599
574	17	3.18	18.96	34.26	600	3.14	18.97	34.27	27.31	78	0.683
768	〃	2.90	19.01	34.34	800	2.86	19.02	34.36	27.41	68	0.838
963	〃	2.62	19.06	34.43	1000	2.57	19.06	34.44	27.49	61	0.978
1158	〃	2.37	19.07	34.45	1200	2.32	19.08	34.46	27.54	56	1.109

Table 3. (Continued)

Station Ho 7 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1205-1308	13	6	1958	48°47′N	166°34′E	11	05	43	032	S 3	WSW 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5 \triangle st$	$\triangle D$
0		4.6	18.39	33.22	0	4.6	18.39	33.22	26.33	171	0
10	3	4.15	18.38	33.21	10	4.15	18.38	33.21	26.37	167	0.017
20	〃	3.60	18.37	33.19	20	3.60	18.37	33.19	26.40	164	0.034
30	〃	3.04	18.38	33.21	30	3.04	18.38	33.21	26.47	157	0.050
50	〃	2.88	18.38	33.21	50	2.88	18.38	33.21	26.49	155	0.081
75	7	1.90	18.38	33.21	75	1.90	18.38	33.21	26.56	149	0.119
99	〃	1.80	18.38	33.21	100	1.80	18.38	33.21	26.57	148	0.156
149	〃	3.41	18.78	33.93	150	3.42	18.78	33.93	27.02	105	0.220
199	5	3.54	18.79	33.95	200	3.54	18.79	33.95	27.02	105	0.273
299	〃	3.53	18.87	34.09	300	3.53	18.87	34.09	27.13	95	0.276
398	〃	3.82	18.91	34.16	400	3.42	18.91	34.16	27.20	88	0.470
498	〃	3.29	18.95	34.23	500	3.29	18.95	34.23	27.27	81	0.557
587	10	3.19	18.99	34.31	600	3.17	19.00	34.33	27.35	74	0.638
784	〃	2.88	19.03	34.38	800	2.85	19.03	34.38	27.43	66	0.713
981	〃	2.59	18.06	34.43	1000	2.56	19.06	34.43	27.49	61	0.850
1179	〃	2.34	19.08	34.47	1200	2.31	19.08	34.47	27.55	55	0.975

Station Ho 8 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2300-2400	13	6	1958	50°04′N	168°00′E	18	05	02	045	S 3	S 1	×	12

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5 \triangle st$	$\triangle D$
0		5.8	18.38	33.21	0	5.8	18.38	33.21	26.18	185	0
10	0	5.16	18.36	33.17	10	5.16	18.36	33.17	26.23	180	0.018
20	〃	4.63	18.36	33.17	20	4.63	18.36	33.17	26.28	175	0.036
30	〃	4.13	18.36	33.17	30	4.13	18.36	33.17	26.34	170	0.053
50	〃	3.81	18.36	33.17	50	3.81	18.36	33.17	26.38	166	0.087
72	18	3.22	18.36	33.17	75	3.19	18.36	33.17	26.43	161	0.128
95	〃	3.13	18.37	33.19	100	3.12	18.38	33.20	26.47	157	0.168
143	〃	3.03	18.40	33.24	150	3.03	18.41	33.26	26.52	153	0.246
188	21	3.52	18.49	33.40	200	3.78	18.52	33.46	26.51	144	0.321
285	〃	4.12	18.74	33.86	300	4.13	18.76	33.89	26.92	115	0.453
383	〃	3.90	18.82	34.00	400	3.88	18.83	34.00	27.04	103	0.566
480	〃	3.76	18.86	34.07	500	3.73	18.87	34.09	27.11	97	0.670
543	30	3.65	18.89	34.12	600	3.58	18.91	34.06	27.19	89	0.767
737	〃	3.38	19.96	34.26	800	3.30	18.97	34.27	27.29	80	0.857
931	〃	3.14	19.99	34.31	1000	3.02	19.00	34.33	27.37	72	1.022
1126	〃	2.79	19.04	34.40	1200	(2.67)	(19.06)	(34.43)	27.48	62	1.169

Table 3. (Continued)

Station Ho 9 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1030–1118	14	6	1958	51°18′N	169°56′E	24	08	28	040	SW 3	WSW 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		5.7	18.35	33.15	0	5.7	18.35	33.15	26.15	188	0
10	2	5.39	18.33	33.12	10	5.39	18.33	33.12	26.16	187	0.019
20	〃	4.60	18.33	33.12	20	4.60	18.33	33.12	26.24	179	0.037
30	〃	3.81	18.35	33.15	30	3.81	18.35	33.15	26.36	168	0.054
50	〃	3.73	18.36	33.17	50	3.73	18.36	33.17	26.38	166	0.087
75	5	3.44	18.36	33.17	75	3.44	18.36	33.17	26.41	163	0.128
100	〃	3.11	18.36	33.17	100	3.11	18.36	33.17	26.43	161	0.169
150	〃	3.11	18.46	33.35	150	3.11	18.46	33.35	26.58	147	0.247
199	7	4.16	18.64	33.68	200	4.17	18.64	33.68	26.73	133	0.318
298	〃	4.02	18.76	33.89	300	4.02	18.76	33.89	26.92	115	0.444
397	〃	3.90	18.85	34.05	400	3.90	18.85	34.05	27.06	101	0.555
496	〃	3.70	18.90	34.14	500	3.70	18.90	34.14	27.15	93	0.656
591	10	3.65	18.94	34.22	600	3.64	18.94	34.22	27.22	86	0.750
788	〃	3.20	18.99	34.31	800	3.18	19.00	34.32	27.35	74	0.921
985	〃	2.90	19.03	34.38	1000	2.88	19.03	34.38	27.43	66	1.073
1182	〃	2.60	19.05	34.42	1200	2.57	19.05	34.42	27.48	62	1.214

Station Ho 10 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2130–2224	14	6	1958	52°30′N	171°34′E	27	02	02	060	W 3	SSW 1	×	16

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		6.1	18.27	33.01	0	6.1	18.27	33.01	26.00	202	0
10	0	5.96	18.26	32.99	10	5.96	18.26	32.99	26.00	202	0.020
20	〃	5.11	18.31	33.08	20	5.11	18.31	33.08	26.15	188	0.040
30	〃	4.85	18.31	33.08	30	4.85	18.31	33.08	26.19	184	0.059
50	〃	3.87	18.33	33.12	50	3.87	18.33	33.12	26.32	172	0.095
75	〃	3.05	18.34	33.13	75	3.05	18.34	33.13	26.42	162	0.137
100	〃	2.76	18.36	33.17	100	2.76	18.36	33.17	26.47	157	0.177
150	〃	3.12	18.62	33.64	150	3.12	18.62	33.64	26.81	125	0.248
200	〃	3.24	18.74	33.86	200	3.24	18.74	33.86	26.97	110	0.308
300	〃	3.40	18.81	33.98	300	3.40	18.81	33.98	27.05	102	0.416
400	〃	3.38	18.88	34.11	400	3.38	18.88	34.11	27.16	101	0.520
500	〃	3.33	18.93	34.20	500	3.33	18.93	34.20	27.23	85	0.616
594	7	3.26	18.98	34.29	600	3.25	18.98	34.29	27.32	77	0.701
792	〃	2.96	19.01	34.34	800	2.95	19.01	34.34	27.39	70	0.857
990	〃	2.73	19.06	34.43	1000	2.72	19.06	34.43	27.48	62	1.000
1188	〃	2.46	19.09	34.49	1200	2.44	19.09	34.49	27.55	55	1.130

Table 3. (Continued)

Station Ho 11 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2340–0025	15	6	1958	53°50′N	175°19′E	27	00	02	045	calm	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		6.5	18.33	33.12	0	6.5	18.33	33.12	26.02	200	0
10	0	5.53	18.32	33.10	10	5.53	18.32	33.12	26.13	199	0.020
20	〃	4.99	18.33	33.12	20	4.99	18.33	33.10	26.21	182	0.039
30	〃	4.75	18.34	33.13	30	4.75	18.34	33.13	26.24	179	0.057
50	〃	3.99	18.35	33.15	50	3.99	18.35	33.15	26.34	170	0.092
75	〃	3.51	18.36	33.17	75	3.51	18.36	33.17	26.40	164	0.134
100	〃	3.45	18.41	33.26	100	3.45	18.41	33.26	26.48	156	0.174
150	〃	3.69	18.51	33.44	150	3.69	18.51	33.44	26.60	145	0.250
200	〃	4.08	18.67	33.73	200	4.08	18.67	33.73	26.78	128	0.319
300	〃	3.91	18.79	33.95	300	3.91	18.79	33.95	26.97	110	0.440
400	〃	3.79	18.85	34.05	400	3.79	18.85	34.05	27.07	100	0.548
500	〃	3.64	18.90	34.14	500	3.64	18.90	34.14	27.16	92	0.648
600	2	3.51	18.92	34.18	600	3.51	18.92	34.18	27.20	88	0.742
800	〃	3.14	18.99	34.31	800	3.14	18.99	34.31	27.34	75	0.914
999	〃	2.98	19.03	34.38	1000	2.98	19.03	34.38	27.42	67	1.067
1199	〃	2.69	19.06	34.43	1200	2.69	19.06	34.43	27.48	62	1.208

Station Ho 12 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1145–1231	16	6	1958	54°24′N	172°22′E	27	09	03	040	NW 1	WNW 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		5.6	18.34	33.13	0	5.6	18.34	33.13	26.15	188	0
10	2	5.45	18.33	33.12	10	5.45	18.33	33.12	26.15	188	0.019
20	〃	5.20	18.33	33.12	20	5.20	18.33	33.12	26.18	185	0.038
30	〃	4.73	18.33	33.12	30	4.73	18.33	33.12	26.23	180	0.056
50	〃	4.33	18.33	33.12	50	4.33	18.33	33.12	26.27	176	0.092
75	4	3.27	18.33	33.12	75	3.27	18.33	33.12	26.38	166	0.135
100	〃	2.98	18.45	33.33	100	2.98	18.45	33.33	26.58	147	0.174
150	〃	3.76	18.64	33.68	150	3.76	18.64	33.68	26.77	129	0.244
197	9	3.88	18.75	33.87	200	3.88	18.75	33.88	26.92	115	0.306
296	〃	3.70	18.83	34.02	300	3.69	18.83	34.02	27.05	102	0.417
395	〃	3.64	18.89	34.12	400	3.64	18.89	34.13	27.14	94	0.518
494	〃	3.56	18.92	34.18	500	3.55	18.92	34.18	27.20	88	0.612
587	14	3.41	18.95	34.23	600	3.39	18.95	34.24	27.26	82	0.701
782	〃	3.08	19.00	34.33	800	3.05	19.00	34.33	27.37	72	0.864
976	〃	2.84	19.03	34.38	1000	2.81	19.04	34.39	27.44	65	1.012
1171	〃	2.59	19.07	34.45	1200	2.54	19.07	34.45	27.51	59	1.149

Table 3. (Continued)

Station Ho 13 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0000–0045	17	6	1958	55°01′N	169°38′E	23	13	02	040	E 3	W 1	3	11

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\Delta st$	ΔD
0		5.8	18.37	33.19	0	5.8	18.37	33.19	26.17	186	0
10	13	5.43	18.36	33.17	10	5.43	18.36	33.17	26.20	183	0.018
19	〃	4.68	18.35	33.15	20	4.59	18.35	33.15	26.28	175	0.036
29	〃	3.63	18.35	33.15	30	3.53	18.35	33.15	26.38	166	0.053
49	〃	2.86	18.38	33.21	50	2.84	18.38	33.21	26.49	155	0.085
70	22	2.42	18.40	33.24	75	2.34	18.40	33.25	26.56	149	0.123
93	〃	2.03	18.43	33.30	100	2.02	18.44	33.32	26.64	141	0.159
139	〃	3.40	18.66	33.71	150	3.51	18.71	33.80	26.90	117	0.224
176	32	3.60	18.76	33.89	200	3.61	18.78	33.90	26.99	108	0.281
268	〃	3.59	18.83	34.02	300	3.54	18.86	34.08	27.12	96	0.388
360	〃	3.44	18.90	34.19	400	3.39	18.93	34.20	27.23	85	0.479
452	〃	3.32	18.93	34.20	500	3.27	18.94	34.22	27.25	83	0.566
549	〃	3.22	18.96	34.26	600	3.15	18.98	34.29	27.33	76	0.649
741	〃	2.92	19.01	34.34	800	2.86	19.02	34.36	27.41	68	0.802
935	〃	2.73	19.06	34.43	1000	2.64	19.07	34.45	27.50	60	0.941
1130	〃	2.47	19.09	34.49	1200	(2.38)	(19.10)	(34.50)	27.57	53	1.066

Station Ho 14 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1210–1306	17	6	1958	55°35′N	167°00′E	23	14	03	045	S 4	W 2	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\Delta st$	ΔD
0		5.2	18.30	33.06	0	5.2	18.30	33.06	26.13	190	0
10	13	5.04	18.29	33.04	10	5.04	18.29	33.04	26.14	189	0.019
19	〃	3.43	18.33	33.12	20	3.25	18.33	33.12	26.38	166	0.037
29	〃	2.41	18.35	33.15	30	2.31	18.35	33.15	26.49	155	0.048
49	〃	0.98	18.35	33.15	50	0.97	18.35	33.15	26.59	146	0.078
70	21	1.18	18.40	33.24	75	1.17	18.40	33.24	26.65	140	0.114
94	〃	1.09	18.40	33.24	100	1.03	18.40	33.24	26.66	139	0.149
140	〃	0.81	18.42	33.28	150	0.79	18.43	33.30	26.72	134	0.217
184	23	1.44	18.48	33.39	200	1.95	18.50	33.42	26.73	133	0.284
278	〃	3.61	18.73	33.84	300	3.62	18.78	33.92	26.99	108	0.406
372	〃	3.56	18.84	34.04	400	3.54	18.85	34.06	27.10	98	0.512
466	〃	3.48	18.88	34.11	500	3.44	18.91	34.17	27.20	88	0.608
543	32	3.39	18.94	34.22	600	3.30	18.95	34.24	27.27	81	0.696
735	〃	3.04	18.98	34.29	800	2.96	19.00	34.33	27.37	72	0.858
928	〃	2.80	19.04	34.40	1000	2.69	19.05	34.42	27.47	62	1.003
1122	〃	2.50	19.07	34.45	1200	(2.38)	(19.08)	(34.47)	27.54	56	1.133

Table 3. (Continued)

Station Ho 15 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0100-0145	18	6	1958	56°09′N	164°14′E	23	10	44	045	S 3	SW		19

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		4.4	17.69	31.96	0	4.4	17.69	31.96	25.35	264	0
10	8	3.65	17.92	32.38	10	3.65	17.92	32.38	25.76	225	0.024
20	〃	2.40	18.40	33.24	20	2.40	18.40	33.24	26.56	149	0.043
30	〃	1.39	18.39	33.22	30	1.39	18.39	33.22	26.62	143	0.058
50	〃	1.21	18.41	33.26	50	1.21	18.41	33.26	26.66	139	0.086
74	20	1.15	18.41	33.26	75	1.15	18.41	33.26	26.67	138	0.121
94	〃	1.11	18.41	33.26	100	1.05	18.41	33.26	26.68	137	0.155
141	〃	0.62	18.42	33.28	150	0.61	18.43	33.30	26.72	134	0.223
191	18	1.88	18.50	33.42	200	2.05	18.52	33.46	26.76	130	0.289
286	〃	3.64	18.75	33.87	300	3.65	18.76	33.90	26.96	111	0.411
382	〃	3.54	18.84	34.04	400	3.52	18.85	34.05	27.10	98	0.518
478	〃	3.45	18.88	34.11	500	3.43	18.87	34.09	27.14	94	0.617
575	24	3.36	18.93	34.20	600	3.34	18.95	34.23	27.26	92	0.714
770	〃	3.06	18.98	34.29	800	3.02	18.99	34.30	27.35	74	0.889
966	〃	2.81	19.05	34.42	1000	2.76	19.06	34.44	27.47	62	1.036
1162	〃	2.52	19.08	34.47	1200	(2.45)	(19.09)	(34.48)	27.55	55	1.166

Station Ho 16 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0900-0958	18	6	1958	55°07′N	163°30′E	23	05	43	032	S 2	SW 1	×	10

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		3.1	18.18	32.84	0	3.1	18.18	32.84	26.17	186	0
10	3	3.07	18.20	32.88	10	3.07	18.20	32.88	26.21	182	0.018
20	〃	2.86	18.34	33.13	20	2.86	18.34	33.13	26.43	161	0.035
30	8	2.64	18.37	33.19	30	2.64	18.37	33.19	26.50	154	0.051
50	〃	2.11	18.38	33.21	50	2.11	10.38	33.21	26.55	150	0.081
74	11	1.24	18.40	33.24	75	1.24	18.40	33.24	26.64	141	0.117
99	8	1.22	18.40	33.24	100	1.22	18.40	33.24	26.64	141	0.152
148	11	1.13	18.42	33.28	150	1.13	18.43	33.29	26.69	136	0.222
193	12	3.24	18.68	33.75	200	3.35	18.69	33.76	26.89	117	0.286
289	〃	3.60	18.79	33.95	300	3.60	18.81	33.98	27.03	104	0.399
386	〃	3.51	18.89	34.12	400	3.51	18.89	34.13	27.16	92	0.500
483	〃	3.54	18.92	34.18	500	3.50	18.93	34.20	27.22	86	0.592
568	22	3.33	18.95	34.23	600	3.29	18.96	34.25	27.28	80	0.676
762	〃	3.04	19.00	34.33	800	3.00	19.01	34.35	27.38	71	0.839
956	〃	2.82	19.05	34.42	1000	2.77	19.06	34.43	27.47	62	0.983
1151	〃	2.58	19.07	34.45	1200	(2.52)	(19.08)	(34.47)	27.53	57	1.115

Table 3. (Continued)

Station Ho 17 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1740–1842	18	6	1958	54°02′N	162°30′E	23	02	02	047	0	SE 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		4.1	18.12	32.74	0	4.1	18.12	32.74	26.00	202	0
10	0	3.65	18.11	32.74	10	3.65	18.11	32.72	26.03	199	0.020
20	〃	3.99	18.24	32.95	20	3.99	18.24	32.95	26.18	185	0.039
30	〃	3.22	18.38	33.21	30	3.22	18.38	33.21	26.46	158	0.056
50	〃	2.62	18.38	33.21	50	2.62	18.38	33.21	26.50	154	0.087
75	〃	1.89	18.39	33.22	75	1.89	18.39	33.22	26.59	146	0.125
100	〃	1.48	18.40	33.24	100	1.48	18.40	33.24	26.63	142	0.161
150	〃	3.30	18.70	33.78	150	3.30	18.70	33.78	26.91	116	0.226
200	〃	3.56	18.77	33.91	200	3.56	18.77	33.91	26.98	109	0.283
300	〃	3.62	18.87	34.09	300	3.62	18.87	34.09	27.12	96	0.388
400	〃	3.45	18.91	34.16	400	3.45	18.91	34.16	27.20	88	0.483
500	〃	3.27	18.95	34.23	500	3.27	18.95	34.23	27.27	81	0.570
600	〃	3.14	18.97	34.27	600	3.14	18.97	34.27	27.31	78	0.653
800	〃	2.82	19.04	34.40	800	2.82	19.04	34.40	27.44	65	0.805
1000	〃	2.68	19.09	34.49	1000	2.68	19.09	34.49	27.53	57	0.938
1200	〃	2.44	19.09	34.49	1200	2.44	19.09	34.49	27.55	55	1.063

Station Ho 18 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0210–0255	19	6	1958	53°21′N	164°03′E	13	02	02	065	S 1	SE 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		7.0	18.39	33.22	0	7.0	18.39	33.22	26.04	198	0
10	0	5.20	18.39	33.22	10	5.20	18.39	33.22	26.27	176	0.019
20	〃	4.46	18.39	33.22	20	4.46	18.39	33.22	26.34	170	0.036
30	〃	2.95	18.39	33.22	30	2.95	18.39	33.22	26.50	154	0.052
50	5	2.32	18.39	33.22	50	2.32	18.39	33.22	26.55	150	0.082
75	〃	1.76	18.39	33.22	75	1.76	18.39	33.22	26.59	146	0.119
100	〃	1.59	18.42	33.28	100	1.59	18.42	33.28	26.65	140	0.155
150	〃	3.40	18.77	33.91	150	3.40	18.77	33.91	27.00	107	0.217
200	0	3.49	18.81	33.98	200	3.49	18.81	33.98	27.05	102	0.270
300	〃	3.47	18.89	34.12	300	3.47	18.89	34.12	27.16	92	0.370
400	〃	3.29	18.96	34.26	400	3.29	18.96	34.26	27.18	80	0.459
500	〃	3.24	18.96	34.26	500	3.24	18.96	34.26	27.29	80	0.542
594	8	3.10	18.99	34.31	600	3.09	18.99	34.31	27.34	75	0.623
792	〃	2.80	19.04	34.40	800	2.79	19.04	34.40	27.44	65	0.772
995	〃	2.58	19.07	34.45	1000	2.57	19.07	34.45	27.51	59	0.907
1183	〃	2.37	19.11	34.52	1200	2.36	19.11	34.53	27.58	52	1.030

Table 3. (Continued)

Station Ho 19 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2015-2103	19	6	1958	52°28′N	165°40′E	14	02	02	060	SE 1	ENE 1	3	13

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		6.3	18.39	33.22	0	6.3	18.39	33.22	26.14	189	0
10	0	5.19	18.39	33.22	10	5.19	18.39	33.22	26.27	176	0.018
20	〃	4.02	18.39	33.22	20	4.02	18.39	33.22	26.40	164	0.035
30	〃	3.12	18.39	33.22	30	3.12	18.39	33.22	26.48	156	0.051
50	〃	2.48	18.40	33.24	50	2.48	18.40	33.24	26.55	150	0.082
75	2	1.72	18.40	33.24	75	1.72	18.40	33.24	26.61	144	0.119
100	〃	1.51	18.42	33.28	100	1.51	18.42	33.28	26.65	140	0.155
150	〃	3.33	18.75	33.87	150	3.33	18.75	33.87	26.97	110	0.218
200	0	3.52	18.83	34.02	200	3.52	18.83	34.02	27.07	100	0.271
300	〃	3.47	18.89	34.12	300	3.47	18.89	34.12	27.16	92	0.370
400	〃	3.40	18.92	34.18	400	3.40	18.92	34.18	27.22	86	0.462
500	〃	3.27	18.96	34.26	500	3.27	18.96	34.26	27.28	80	0.548
594	8	3.09	18.99	31.31	600	3.08	18.99	34.31	27.35	74	0.629
792	〃	2.87	19.03	34.38	800	2.86	19.03	34.38	27.43	66	0.778
990	〃	2.56	19.07	34.45	1000	2.54	19.07	34.45	27.51	59	0.914
1180	〃	2.34	19.11	34.52	1200	2.33	19.11	34.52	27.59	51	1.036

Station Ho 20 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0550-0635	20	6	1958	51°52′N	167°24′N	34	02	02	076	NNW 1	×	×	14

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		7.0	18.33	33.12	0	7.0	18.33	33.12	25.96	206	0
10	2	5.69	18.33	33.12	10	5.69	18.33	33.12	26.13	190	0.020
20	〃	5.34	18.33	33.12	20	5.34	18.33	33.12	26.17	186	0.039
30	〃	3.83	18.33	33.12	30	3.83	18.33	33.12	26.33	171	0.057
50	〃	3.31	18.33	33.12	50	3.31	18.33	33.12	26.38	166	0.091
75	5	2.60	18.34	33.13	75	2.60	18.34	33.13	26.46	158	0.132
100	〃	2.47	18.38	33.21	100	2.47	18.38	33.21	26.52	153	0.171
150	〃	3.03	18.63	33.66	150	3.03	18.63	33.66	26.84	122	0.240
198	8	3.39	18.76	33.89	200	3.40	18.76	33.90	26.98	109	0.299
297	〃	3.44	×	×	300	3.44	18.84	34.08	27.10	98	0.405
396	〃	3.43	18.90	34.14	400	3.43	18.90	34.14	27.18	90	0.502
495	〃	3.28	18.93	34.20	500	3.27	18.93	34.20	27.24	84	0.592
587	12	3.14	18.98	34.29	600	3.12	18.99	34.30	27.35	74	0.675
782	〃	2.88	19.02	34.36	800	2.86	19.02	34.36	27.41	68	0.826
978	〃	2.57	19.05	34.42	1000	2.55	19.06	34.43	27.50	60	0.965
1174	〃	2.48	19.08	34.47	1200	2.47	19.09	34.48	27.55	55	1.093

Table 3. (Continued)

Station Ho 21 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1500–1605	20	6	1158	50°56′N	166°15′E	27	02	41	063	W 1	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		6.5	18.30	33.06	0	6.5	18.30	33.06	25.98	204	0
10	0	5.82	18.29	33.04	10	5.82	18.29	33.04	26.06	196	0.020
20	〃	4.47	18.28	33.03	20	4.47	18.28	33.03	26.19	184	0.039
30	〃	3.99	18.28	33.03	30	3.99	18.28	33.03	26.24	179	0.057
50	5	3.68	18.31	33.08	50	3.68	18.31	33.08	26.32	172	0.092
75	〃	2.99	18.32	33.10	75	2.99	18.32	33.10	26.40	164	0.134
100	〃	2.59	18.32	33.10	100	2.59	18.32	33.10	26.43	161	0.175
150	〃	3.28	18.60	33.60	150	3.28	18.60	33.60	26.77	129	0.248
197	8	3.51	18.76	33.89	200	3.52	18.77	33.91	26.98	109	0.308
295	〃	3.44	18.85	34.05	300	3.44	18.85	34.05	27.11	97	0.414
394	〃	3.49	18.90	34.14	400	3.49	18.90	34.14	27.17	91	0.511
493	〃	3.29	18.94	34.22	500	3.28	18.94	34.22	27.26	82	0.600
487	13	3.31	18.94	34.22	600	3.16	18.96	34.26	27.30	79	0.684
683	〃	3.06	18.99	34.31	800	2.86	19.02	34.36	27.41	68	0.840
879	〃	2.71	19.03	34.38	1000	2.60	19.05	34.41	27.47	62	0.981
1076	〃	2.54	19.06	34.43							

Station Ho 22 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0000–0106	21	6	1958	50°00′N	165°00′E	23	05	02	063	WSW 2	SW 1	×	20

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		6.6	18.36	33.17	0	6.6	18.36	33.17	26.05	197	0
10	0	6.12	18.35	33.15	10	6.12	18.35	33.15	26.10	192	0.019
20	〃	4.74	18.37	33.19	20	4.74	18.37	33.19	26.28	175	0.037
30	8	3.15	18.37	33.19	30	3.15	18.37	33.19	26.05	159	0.054
50	0	2.49	18.37	33.19	50	2.49	18.37	33.19	26.51	154	0.085
75	8	1.60	18.37	33.19	75	1.60	18.37	33.19	26.58	147	0.123
99	〃	1.49	18.39	33.22	100	1.49	18.39	33.22	26.61	144	0.159
149	〃	2.71	18.61	33.62	150	2.69	18.61	33.62	26.84	122	0.226
200	4	3.30	18.75	33.87	200	3.30	18.75	33.87	26.98	109	0.285
299	〃	3.49	18.89	34.12	300	3.49	18.89	34.12	27.16	92	0.388
399	〃	3.38	18.93	34.20	400	3.38	18.93	34.20	27.23	85	0.479
499	〃	3.22	18.94	34.22	500	3.22	18.94	34.22	27.26	82	0.565
580	15	3.05	18.97	34.27	600	3.02	18.98	34.29	27.34	75	0.647
779	〃	2.88	19.02	34.36	800	2.85	19.02	34.36	27.41	68	0.799
978	〃	2.64	19.05	34.42	1000	2.61	19.06	34.43	27.49	61	0.939
1177	〃	2.36	19.08	34.47	1200	2.33	19.09	34.48	27.56	54	1.066

Table 3. (Continued)

Station Ho 23 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1000-1051	21	6	1958	50°40′N	163°05′E	27	09	03	060	WSW 2	W 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		6.7	18.35	33.15	0	6.7	18.35	33.15	26.03	199	0
10	7	6.68	18.34	33.13	10	6.68	18.34	33.13	26.03	199	0.020
20	〃	3.32	18.32	33.10	20	3.32	18.32	33.10	26.36	168	0.038
30	〃	3.00	18.32	33.10	30	3.00	18.32	33.10	26.40	164	0.055
50	〃	2.20	18.32	33.10	50	2.20	18.32	33.10	26.46	158	0.087
69	25	1.88	18.35	33.15	75	1.86	18.35	33.16	26.53	152	0.126
91	〃	1.79	18.36	33.17	100	1.78	18.37	33.19	26.56	149	0.164
136	〃	2.75	18.61	33.62	150	3.04	18.66	33.71	26.88	118	0.231
181	23	3.29	18.74	33.86	200	3.35	18.76	33.90	26.99	108	0.288
271	〃	3.43	18.83	34.02	300	3.44	18.85	34.06	27.12	96	0.393
362	〃	3.39	18.90	34.14	400	3.30	18.91	34.17	27.22	86	0.487
453	〃	3.17	18.93	34.20	500	3.11	18.94	34.21	27.27	81	0.573
535	33	3.06	18.95	34.23	600	3.00	18.96	34.26	27.32	77	0.656
719	〃	2.89	19.00	34.33	800	2.80	19.02	34.36	27.42	67	0.809
905	〃	2.72	19.04	34.40	1000	2.59	19.06	34.43	27.49	61	0.948
1097	〃	2.46	19.07	34.45							

Station Ho 24 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2000-2105	21	6	1958	51°21′N	161°13′E	27	15	02	045	W 4	W 2	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		5.6	18.35	33.15	0	5.6	18.35	33.15	26.16	187	0
9	26	5.58	18.32	33.10	10	5.57	18.32	33.10	26.12	191	0.019
18	〃	5.33	18.33	33.12	20	5.27	18.34	33.13	26.18	185	0.038
25	34	4.34	18.36	33.17	30	3.64	18.36	33.17	26.39	165	0.056
45	26	1.91	18.36	33.17	50	1.86	18.37	33.18	26.55	150	0.088
62	34	1.75	18.38	33.21	75	1.46	18.38	33.21	26.60	145	0.125
83	〃	1.29	18.38	33.21	100	1.08	18.39	33.22	26.64	141	0.161
124	〃	0.97	18.41	33.26	150	1.00	18.46	33.35	26.74	132	0.229
167	33	2.33	18.56	33.53	200	3.25	18.72	33.82	26.94	113	0.291
250	〃	3.56	18.81	33.98	300	3.55	18.84	34.03	27.08	99	0.400
334	〃	3.50	18.86	34.07	400	3.32	18.90	34.14	27.19	89	0.497
417	〃	3.28	18.91	34.16	500	3.26	18.94	34.22	27.26	82	0.585
500	51	3.26	18.94	34.22	600	3.15	18.98	34.29	27.33	76	0.668
671	〃	3.08	19.00	34.33	800	2.85	19.02	34.39	27.41	68	0.821
843	〃	2.78	19.03	34.38	1000	2.58	19.06	34.43	27.49	61	0.961
1016	〃	2.56	19.06	34.43							

Table 3. (Continued)

Station Ho 25 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1200-1330	22	6	1958	52°00′N	159°32′E	23	14	28	051	SW 5	SW 3	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		4.5	18.08	32.66	0	4.5	18.08	32.66	25.90	211	0
9	21	4.35	18.10	32.70	10	4.33	18.10	32.70	25.95	207	0.021
18	〃	4.22	18.10	32.70	20	4.00	18.11	32.72	26.00	202	0.041
28	〃	1.17	18.24	32.95	30	1.11	18.24	32.95	26.42	162	0.059
47	〃	0.55	18.25	32.97	50	0.54	18.25	32.97	26.46	158	0.091
69	25	0.47	18.27	33.01	75	0.48	18.28	33.03	26.51	154	0.130
91	〃	0.49	18.30	33.06	100	0.48	18.30	33.07	26.54	151	0.168
136	〃	0.46	18.33	33.12	150	0.49	18.34	33.13	26.60	145	0.242
173	33	0.85	18.35	33.15	200	0.83	18.37	33.19	26.63	142	0.314
261	〃	0.77	18.42	33.28	300	1.05	18.44	33.32	26.72	134	0.452
350	〃	1.71	18.49	33.40	400	2.50	18.57	33.55	26.80	126	0.583
442	〃	2.90	18.63	33.66	500	2.89	18.68	33.75	26.92	115	0.706
498	55	3.18	18.68	33.75	600	3.44	18.79	33.94	27.02	105	0.820
676	〃	3.51	18.85	34.05	800	3.42	18.91	34.17	27.20	88	1.023
856	〃	3.33	18.94	34.22	1000	3.12	18.99	34.31	27.34	75	1.199
1040	〃	3.06	19.00	34.33							

Station Ho 27 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1400-1450	23	6	1958	49°48′N	157°12′E	27	09	03	052	W 3	W 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		5.4	18.24	32.95	0	5.4	18.24	32.95	26.03	199	0
10	7	5.37	18.22	32.92	10	5.37	18.22	32.92	26.01	201	0.020
20	〃	4.15	18.23	32.94	20	4.15	18.23	32.94	26.15	188	0.039
30	〃	2.04	18.28	33.03	30	2.04	18.28	33.03	26.42	162	0.057
50	〃	0.85	18.28	33.03	50	0.85	18.28	33.03	26.50	154	0.089
72	16	0.75	18.30	33.06	75	0.74	18.30	33.06	26.53	152	0.127
95	18	0.84	18.32	33.10	100	0.82	18.33	33.11	26.57	148	0.165
143	〃	0.48	18.36	33.17	150	0.46	18.37	33.18	26.63	142	0.238
174	22	0.50	18.38	33.21	200	0.66	18.40	33.25	26.67	138	0.308
261	〃	1.38	18.47	33.37	300	2.00	18.54	33.50	26.78	128	0.441
348	〃	2.74	18.60	33.60	400	3.12	18.64	33.67	26.84	122	0.568
435	〃	3.25	18.67	33.73	500	3.38	18.75	33.87	26.97	110	0.687
550	35	3.48	18.80	33.96	600	3.49	18.83	34.01	27.08	99	0.795
743	〃	3.43	18.91	34.16	800	3.36	18.93	34.20	27.23	85	0.989
937	〃	3.20	18.96	34.25	1000	3.12	18.94	34.27	27.27	81	1.168
1132	〃	2.96	19.00	34.33							

Table 3. (Continued)

Station Ho 28 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0000–0058	24	6	1958	48°40′N	156°07′E	21	02	03	060	SSW 1	W 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		6.1	18.26	32.99	0	6.1	18.26	32.99	25.98	204	0
10	0	5.98	18.31	33.08	10	5.98	18.31	33.08	26.06	196	0.020
20	〃	4.56	18.31	33.08	20	4.56	18.31	33.08	26.24	179	0.039
30	〃	2.99	18.31	33.08	30	2.99	18.31	33.08	26.38	166	0.056
50	〃	1.58	18.35	33.15	50	1.58	18.35	33.15	26.55	150	0.088
75	3	1.28	18.37	33.19	75	1.28	18.37	33.19	26.60	145	0.125
100	〃	0.91	18.39	33.22	100	0.91	18.39	33.22	26.65	140	0.161
150	〃	1.25	18.53	33.48	150	1.25	18.53	33.48	26.83	123	0.227
200	4	3.26	18.72	33.82	200	3.26	18.72	33.82	26.94	113	0.287
299	〃	3.45	18.84	34.04	300	3.45	18.84	34.04	27.10	98	0.395
399	〃	3.40	18.95	34.24	400	3.40	18.95	34.24	27.26	82	0.488
499	〃	3.28	18.95	34.24	500	3.28	18.95	34.24	27.27	81	0.572
591	10	3.14	19.01	34.34	600	3.13	19.01	34.35	27.37	72	0.652
788	〃	3.83	19.04	34.40	800	2.81	19.04	34.40	27.44	65	0.798
985	〃	2.63	19.06	34.43	1000	2.60	19.06	34.43	27.49	61	0.935
1182	〃	2.35			1200	2.32					

Station Ho 29 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2015–2142	24	6	1958	47°30′N	156°00′E	18	02	43	062	S 2	S 1	×	12

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		6.0	18.28	33.03	0	6.0	18.28	33.03	26.02	200	0
10	0	5.64	18.28	33.03	10	5.64	18.28	33.03	26.06	196	0.020
20	〃	4.95	18.29	33.04	20	4.95	18.29	33.04	26.15	188	0.039
30	〃	3.33	18.34	33.13	30	3.33	18.34	33.13	26.38	166	0.057
50	8	2.14	18.34	33.13	50	2.14	18.34	33.13	26.49	155	0.089
75	〃	1.20	18.36	33.17	75	1.20	18.36	33.17	26.58	147	0.127
98	11	1.39	18.38	33.21	100	1.43	18.39	33.22	26.62	143	0.163
148	〃	2.48	18.57	33.55	150	2.52	18.58	33.56	26.81	125	0.230
196	12	3.30	18.73	33.84	200	3.35	18.74	33.85	26.96	111	0.290
293	〃	3.44	18.84	34.04	300	3.44	18.85	34.05	27.12	96	0.396
391	〃	3.39	18.90	34.15	400	3.37	18.91	34.16	27.20	88	0.491
490	〃	3.21	18.94	34.22	500	3.20	18.95	34.23	27.27	81	0.578
586	16	3.14	18.97	34.27	600	3.10	18.97	34.27	27.32	77	0.661
782	〃	2.78	19.01	34.34	800	2.75	19.01	34.35	27.40	69	0.816
980	〃	2.55	19.06	34.43	1000	2.52	19.06	34.43	27.50	60	0.955
1179	18	2.35	19.08	34.47	1200	2.33	19.08	34.47	27.54	56	1.082

Table 3. (Continued)

Stasion Ho 30 (2nd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0700–0750	25	6	1958	46°30′N	153°33′E	25	02	44	071	WSW 1	S 1	×	12

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		6.0	18.23	32.94	0	6.0	18.23	32.94	25.45	254	0
10	6	5.09	18.28	33.03	10	5.09	18.28	33.03	26.12	191	0.022
20	〃	3.06	18.34	33.13	20	3.06	18.34	33.13	26.42	162	0.040
30	〃	2.49	18.34	33.13	30	2.49	18.34	33.13	26.46	158	0.056
50	〃	1.87	18.34	33.13	50	1.87	18.34	33.13	26.52	153	0.087
73	15	1.57	18.34	33.13	75	1.52	18.34	33.13	26.53	153	0.125
97	〃	0.99	18.40	33.24	100	0.98	18.40	33.24	26.66	139	0.161
145	〃	0.96	18.40	33.24	150	0.97	18.40	33.25	26.66	139	0.231
179	22	1.83	18.52	33.46	200	2.15	18.56	33.53	26.81	125	0.297
273	〃	2.60	18.67	33.73	300	2.68	18.71	33.80	26.97	110	0.416
368	〃	2.86	18.77	33.91	400	2.90	18.79	33.94	27.07	100	0.523
464	〃	3.00	18.82	34.00	500	3.04	18.85	34.06	27.15	93	0.622
577	24	3.12	18.91	34.16	600	3.11	18.92	34.18	27.24	84	0.714
775	〃	2.95	18.98	34.29	800	2.93	18.99	34.30	27.36	73	0.880
973	〃	2.77	19.02	34.36	1000	2.73	19.02	34.36	27.43	66	1.030
1171	〃	2.49	19.06	34.43	1200	2.45	19.06	34.44	27.50	60	1.169

III. Third cruise

Station Ho 1 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1000–1102	9	7	1958	46°00′N	144°00′E	16	04	01	125	SSE 2	SSE 1	×	×

Observed					Intetpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		12.8	17.76	32.09	0	12.8	17.76	32.09	24.18	375	0
10	10	8.20	17.79	32.14	10	8.20	17.79	32.14	25.02	295	0.034
20	〃	1.60	17.93	32.39	20	1.60	17.93	32.39	25.93	205	0.079
30	〃	−0.42	18.05	32.61	30	−0.42	18.05	32.61	26.21	182	0.078
49	〃	−1.38	18.26	32.99	50	−1.38	18.26	32.99	26.56	149	0.111
73	14	−1.43	18.29	33.04	75	−1.42	18.29	33.04	26.60	145	0.147
97	〃	−1.30	18.33	33.12	100	−1.23	18.39	33.19	26.71	135	0.182
146	〃	−0.16	18.39	33.22	150	−0.14	18.39	33.22	26.76	135	0.250
197	17	0.41	18.44	33.31	200	0.42	18.44	33.31	26.77	129	0.316
294	〃	0.57	18.51	33.44	300	0.48	18.51	33.44	26.84	122	0.441
388	〃	(1.60)	18.56	33.53	400	1.51	18.57	33.55	(26.78)	128	0.566
479	〃	0.90	18.62	33.64	500	1.04	18.61	33.62	26.95	112	0.677
577	21	1.54	18.57	33.55	600	1.59	18.61	33.62	(26.90)	117	0.802
785	〃	2.02	18.90	34.15							

Table 3. (Continued)

Station Ho 2 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0325–1335	10	7	1958	48°00′N	146°00′E	13	07	02	090	SSE 3	SSE 2	7	14.5

Observed					Intetpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		9.0	17.76	32.09	10	9.0	17.76	32.09	24.85	311	0
10	0	8.30	17.77	32.11	20	8.30	17.77	32.11	24.98	299	0.031
20	〃	0.99	18.00	32.52	30	0.99	18.00	32.52	26.09	193	0.051
30	〃	−0.98	18.12	32.74	50	−0.98	18.12	32.74	26.34	170	0.073
50	〃	−1.39	18.26	32.99	75	−1.39	18.26	32.99	26.56	149	0.105
75	〃	−1.36	18.31	33.08	100	−1.36	18.31	33.08	26.63	142	0.142
100	〃	−1.36	18.34	33.13	150	−1.36	18.34	33.13	26.69	136	0.176
150	〃	−1.01	18.34	33.13	200	−1.01	18.34	33.13	26.69	136	0.244
199	6	0.58	18.46	33.35	300	0.58	18.46	33.35	26.77	129	0.310
296	〃	0.65	18.53	33.48	400	0.67	18.53	33.48	26.85	121	0.435
399	〃	1.12	18.57	33.55	500	1.12	18.57	33.55	26.90	117	0.554
500	〃	1.20	18.66	33.71	600	1.20	18.66	33.71	27.01	106	0.666
569	5	1.75	18.63	33.66	800	1.80	18.66	33.71	27.01	106	0.774
792	〃	2.09	18.82	34.00	1000	2.10	18.83	34.02	27.20	88	0.974
993	〃	2.24	18.95	34.24	1200	2.24	18.96	34.25	27.38	71	1.142
1197	〃	2.26	19.02	34.36							

Station Ho 3 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1415–1520	10	7	1958	49°30′N	145°30′E	16	04	02	061	SSE 2	SSE 2	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		6.3	17.81	32.18	10	6.3	17.81	32.18	25.30	268	0
10	8	6.24	17.79	32.14	20	6.24	17.79	32.14	25.30	268	0.022
20	〃	4.31	17.79	32.14	30	4.31	17.79	32.14	25.50	249	0.048
30	〃	0.47	17.78	32.48	50	0.47	17.78	32.48	25.80	221	0.071
50	〃	−1.59	18.20	32.88	75	−1.59	18.20	32.88	26.48	156	0.109
69	28	−1.44	18.28	33.03	100	−1.31	18.29	33.04	26.60	145	0.147
88	〃	−1.40	18.31	33.08	150	−0.85	18.32	33.10	26.63	142	0.183
132	〃	−0.29	18.34	33.13	200	−0.21	18.37	33.19	26.69	136	0.252
190	23	0.05	18.44	33.31	300	0.06	18.49	33.40	26.84	122	0.317
277	〃	0.08	18.48	33.39	400	0.21	18.49	33.40	(26.83)	123	0.439
381	〃	0.75	18.53	33.48	500	0.75	18.53	33.48	26.86	120	0.559

Table 3. (Continued)

Station Ho 4 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0003-0057	11	7	1958	49°30′N	147°20′E	16	07	57	083	SSE 3	SE 2	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		8.1	17.71	32.00	0	8.1	17.71	32.00	24.43	351	0
10	17	8.20	17.71	32.00	10	8.20	17.71	32.00	24.82	314	0.033
19	〃	6.49	17.71	32.00	20	5.95	17.75	32.07	25.27	271	0.063
29	〃	1.08	18.07	32.65	30	1.05	18.07	32.65	26.19	184	0.085
48	〃	-0.60	18.10	32.70	50	-0.64	18.11	32.71	26.31	173	0.121
71	19	-1.11	18.25	32.97	75	-1.13	18.26	32.99	26.55	150	0.161
95	〃	-1.22	18.29	33.04	100	-1.20	18.30	33.06	26.60	145	0.199
142	〃	-1.00	18.34	33.13	150	-0.89	18.36	33.17	26.70	135	0.269
188	29	0.35	18.44	33.31	200	0.43	18.45	33.33	26.76	130	0.335
278	〃	0.92	18.51	33.44	300	0.95	18.52	33.41	26.82	125	0.462
371	〃	1.03	×	×	400	1.10	18.62	33.64	26.97	110	0.580
473	〃	1.29	×	×	500	1.38	18.72	33.82	27.07	100	0.686
542	33	1.57	18.73	33.84	600	1.77	18.76	33.89	27.12	96	0.786
738	〃	2.17	18.82	34.00	800	2.23	18.85	34.05	27.21	87	0.976
937	〃	3.35	18.97	34.27	1000	2.33	19.01	34.34	27.42	67	1.150
1137	〃	2.28	19.10	34.340							

Station Ho 5 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1034-1145	11	7	1958	50°30′N	149°00′E	15	02	03	077	SE 1	SE 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		8.1	17.86	32.27	0	8.1	17.86	32.27	24.42	352	0
10	4	6.65	17.92	32.38	10	6.65	17.92	32.38	25.42	352	0.035
20	〃	5.70	17.98	32.48	20	5.70	17.98	32.48	25.62	238	0.065
30	〃	2.99	18.01	32.54	30	2.99	18.01	32.54	25.97	205	0.087
50	〃	-0.87	18.27	33.01	50	-0.89	18.27	33.01	26.56	149	0.122
75	5	-0.26	18.30	33.06	75	-0.26	18.30	33.06	26.59	146	0.157
100	〃	-1.01	18.34	33.13	100	-1.01	18.34	33.13	26.69	136	0.192
149	〃	-0.04	18.37	33.19	150	-0.03	18.37	33.19	26.68	137	0.261
191	13	0.73	18.48	33.39	200	0.74	18.48	33.39	26.80	126	0.326
279	〃	0.92	18.48	33.39	300	0.96	18.49	33.40	26.79	127	0.452
388	〃	1.11	18.53	33.48	400	1.13	18.55	33.51	26.85	121	0.576
489	〃	1.30	18.68	33.75	500	1.35	18.69	33.77	27.04	103	0.689
576	16	1.70	18.73	33.84	600	1.81	18.76	33.89	27.12	96	0.790
771	〃	2.15	18.85	34.05	800	2.17	18.87	34.09	27.12	96	0.988
960	〃	2.28	18.97	34.27	1000	2.28	18.98	34.29	27.40	69	1.162
1150	〃	2.27	19.01	34.34							

Table 3. (Continued)

Station Ho 6 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2104-2206	12	7	1958	51°40′N	147°07′E	21	07	40	085	S 2	S 1	4	9

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		8.1	18.00	32.52	0	8.1	18.00	32.52	25.34	265	0
10	8	7.88	18.02	32.56	10	7.88	18.02	32.56	25.39	260	0.026
20	〃	4.05	18.04	32.59	20	4.05	18.04	32.59	25.88	213	0.050
30	〃	1.01	18.10	32.70	30	1.01	18.10	32.70	26.23	180	0.070
50	〃	−1.09	18.24	32.95	50	−1.09	18.24	32.95	26.52	153	0.093
67	26	−1.58	18.28	33.03	75	−1.59	18.28	33.03	26.60	145	0.130
77	〃	−1.59	18.32	33.10	100	−1.52	18.33	33.12	26.67	138	0.166
135	〃	−1.46	18.34	33.13	150	−0.89	18.39	33.22	26.74	132	0.233
172	34	0.31	18.44	33.31	200	0.48	18.47	33.37	26.79	127	0.298
262	〃	0.83	18.53	33.48	300	0.90	18.56	33.56	26.89	117	0.420
349	〃	0.97	18.58	33.57	400	1.10	18.62	33.64	26.96	111	0.534
455	〃	1.24	18.65	33.69	500	1.44	18.67	33.73	27.01	106	0.643
516	39	1.51	18.72	33.82	600	1.81	18.76	33.89	27.13	95	0.745
596	〃	2.16	18.79	33.95	800	2.23	18.85	34.05	27.21	87	0.933
885	〃	2.29	18.91	34.16	1000	2.32	18.93	34.20	27.33	76	1.105
1059	〃	2.33	18.97	34.27							

Station Ho 7 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0913-1018	13	7	1958	52°45′N	145°00′E	16	09	45	098	SSE 2	SSE 2	×	12

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		9.3	16.60	29.99	0	9.3	16.60	29.99	23.18	471	0
9	20	6.02	17.44	31.51	10	5.78	17.50	31.62	24.93	304	0.039
19	〃	4.45	18.07	32.65	20	4.13	18.07	32.65	25.92	210	0.065
28	〃	1.19	18.11	32.72	30	0.94	18.13	32.76	26.28	175	0.084
47	〃	−1.45	18.28	33.03	50	−1.48	18.28	33.03	26.60	145	0.116
61	36	−1.62	18.29	33.04	75	−1.62	18.30	33.06	26.62	144	0.153
81	〃	−1.62	18.31	33.08	100	−1.54	18.32	33.10	26.62	144	0.188
121	〃	−1.51	18.36	33.17	150	−0.71	18.38	33.21	26.70	135	0.258
169	32	0.17	18.45	33.33	200	0.45	18.48	33.39	26.80	126	0.323
260	〃	0.92	18.53	33.48	300	1.01	18.54	33.50	26.85	121	0.446
351	〃	1.12	18.58	33.57	400	1.20	18.61	33.62	26.95	112	0.563
455	〃	1.27	18.64	33.68	500	1.36	18.68	33.75	27.05	102	0.671
516	43	1.53	18.69	33.77	600	1.85	18.76	33.89	27.12	96	0.772
700	〃	2.22	18.85	34.05	800	2.27	18.90	34.15	27.29	80	0.954
919	〃	2.32	18.95	34.24	1000	2.32	18.96	34.25	27.38	71	1.114
1090	〃	2.31	18.97	34.27							

Table 3. (Continued)

Station Ho 8 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1500–1628	12	7	1958	53°30′N	45°00′E	20	09	44	080	SSW 5	SSW 5	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		9.8	16.21	29.29	0	9.8	16.43	29.29	22.50	536	0
10	7	9.09	16.23	29.33	10	8.39	16.23	29.33	23.07	481	0.051
19	〃	1.87	18.09	32.68	20	1.87	18.09	32.68	26.15	188	0.084
29	〃	-0.99	18.25	32.97	30	-1.02	18.25	32.97	26.53	152	0.101
48	〃	-1.51	18.27	33.01	50	-1.52	18.27	33.01	26.59	146	0.131
72	19	-1.66	18.29	33.04	75	-1.65	18.30	33.06	26.62	143	0.169
95	〃	-1.58	18.33	33.12	100	-1.52	18.34	33.13	26.69	136	0.204
142	〃	-1.08	18.39	33.22	150	-1.01	18.41	33.26	26.77	129	0.270
186	26	0.71	18.49	33.40	200	0.74	18.50	33.42	26.81	125	0.334
277	〃	0.90	18.53	33.48	300	0.95	18.58	33.57	26.92	115	0.454
377	〃	1.11	18.61	33.62	400	1.19	18.62	33.64	26.96	111	0.567
489	〃	1.49	18.68	33.75	500	1.53	18.69	33.77	27.02	105	0.676
550	30	1.75	18.73	33.84	600	1.89	18.75	33.87	27.10	98	0.779
734	〃	2.25	18.87	34.09	800	2.28	18.89	34.13	27.25	83	0.967
964	〃	2.36	18.95	34.24	1000	2.35	18.97	34.27	27.38	71	1.131
1114	〃	2.32	19.00	34.33							

Station Ho 9 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0100–0225	13	7	1958	54°00′N	147°00′E	21	09	40	090	SE3	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		8.1	18.09	32.68	0	8.1	18.09	32.68	25.48	251	0
9	20	8.06	18.10	32.70	10	7.91	18.10	32.70	25.50	249	0.025
19	〃	6.49	18.12	32.74	20	6.15	18.12	32.74	25.78	223	0.049
27	〃	3.72	×	×	30	3.11	18.13	32.76	26.10	193	0.069
45	〃	-0.04	×	×	50	-0.35	18.15	32.79	26.37	167	0.105
68	35	-1.61	18.23	32.94	75	-1.62	18.27	33.01	26.55	150	0.145
82	〃	-1.62	18.31	33.08	100	-1.58	18.33	33.12	26.67	138	0.181
123	〃	-1.53	18.35	33.15	150	-0.81	18.38	33.21	26.70	135	0.250
150	43	-0.81	18.38	33.21	200	-0.45	18.44	33.31	26.80	126	0.315
247	〃	0.09	18.49	33.40	300	0.75	18.49	33.40	26.80	126	0.441
310	〃	0.88	18.51	33.44	400	1.00	18.57	33.55	27.03	104	0.556
426	〃	1.04	18.61	33.62	500	1.33	18.68	33.75	27.02	105	0.661
491	46	1.27	18.67	33.73	600	1.64	18.75	33.87	27.11	97	0.764
678	〃	2.01	18.82	34.00	800	2.22	18.88	34.11	27.26	82	0.950
870	〃	2.32	18.92	34.18	1000	2.33	18.94	34.22	27.35	74	1.116
1066	〃	2.33	18.99	34.31							

Table 3. (Continued)

Station Ho 10 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1000–1100	13	7	1958	55°00′N	148°00′E	16	09	45	075	SE 3	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		7.7	18.05	32.61	0	7.7	18.05	32.61	25.46	253	0
10	13	7.71	18.05	32.61	10	7.71	18.05	32.61	25.46	253	0.025
19	〃	5.08	18.07	32.65	20	4.86	18.07	32.65	25.86	215	0.049
29	〃	2.87	18.10	32.70	30	2.88	18.10	32.70	26.18	185	0.069
48	〃	−0.96	18.12	32.74	50	−1.00	18.12	32.74	26.35	169	0.104
72	15	−1.49	18.22	32.92	75	−1.45	18.22	32.92	26.50	154	0.144
97	〃	−1.18	18.25	32.97	100	−1.16	18.25	32.97	26.54	151	0.182
145	〃	−0.83	18.27	33.01	150	−0.72	18.28	33.03	26.58	147	0.253
179	24	0.08	18.34	33.13	200	0.28	18.38	33.21	26.68	137	0.324
276	〃	1.15	18.47	33.37	300	1.14	18.47	33.37	26.75	131	0.458
372	〃	1.12	18.48	33.39	400	1.11	18.51	33.44	26.80	126	0.586
460	〃	1.10	18.58	33.57	500	1.23	18.61	33.62	26.94	113	0.706
576	27	1.48	18.66	33.77							

Station Ho 11 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1847–1924	13	7	1958	55°00′N	146°00′E	29	05	44	056	NW 1	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		6.7	18.08	32.66	0	6.7	18.08	32.66	25.65	235	0
10	6	6.78	18.08	32.66	10	6.78	18.08	32.66	25.65	235	0.024
20	〃	3.52	18.10	32.70	20	3.52	18.10	32.70	26.02	200	0.045
30	〃	1.02	18.12	32.74	30	1.02	18.12	32.74	26.25	178	0.064
50	〃	−0.51	18.25	32.97	50	−0.51	18.25	32.97	26.51	154	0.097
75	0	−1.17	18.27	33.01	75	−1.17	18.27	33.01	26.58	147	0.135
100	〃	−1.42	18.30	33.06	100	−1.42	18.30	33.06	26.61	144	0.172
150	〃	−0.25	18.34	33.13	150	−0.25	18.34	33.13	26.64	141	0.243
202	6	1.13	18.39	33.22	200	1.13	18.39	33.22	26.65	140	0.313
298	〃	1.15	18.23	32.94	300	(1.14)	(18.23)	(32.94)			
399	〃	1.08	18.23	32.94	400	(1.08)	(18.23)	(32.94)			
496	〃	1.29									

Table 3. (Continued)

Station Ho 12 (3rd)

Time (G.M.T.)	Day	Mohth	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0200-0300	14	7	1958	55°11′N	144°10′E	29	05	44	091	W 1	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		6.6	17.80	32.16	0	6.6	17.80	32.16	25.26	272	0
10	5	5.41	17.89	32.32	10	5.41	17.89	32.32	25.54	246	0.026
20	〃	4.11	18.00	32.52	20	4.11	18.00	32.52	25.82	219	0.049
30	〃	1.42	18.17	32.83	30	1.42	18.17	32.83	26.30	173	0.068
50	〃	-0.15	18.22	32.92	50	-0.15	18.22	32.92	26.46	158	0.101
68	26	-0.26	18.22	32.92	75	-0.49	18.24	32.95	26.50	154	0.140
91	〃	-1.00	18.27	33.01	100	-1.10	18.27	33.01	26.56	149	0.178
135	〃	-1.51	18.29	33.04	150	-1.14	18.33	33.12	26.65	140	0.251
172	31	-0.77	18.37	33.19	200	0.00	18.39	33.22	26.70	135	0.320
267	〃	0.77	18.46	33.35	300	0.86	18.49	33.40	26.79	127	0.451
363	〃	1.03	18.54	33.50	400	1.00	18.55	33.51	26.87	119	0.574
455	〃	0.96	18.58	33.57	500	1.14	18.62	33.64	26.96	111	0.690
480	47	1.13	18.60	33.60	600	1.56	18.71	33.80	27.06	101	0.797
679	〃	1.85	18.79	33.95	800	1.99	18.85	34.05	27.23	85	0.987
877	〃	2.09	18.90	34.15							

Station Ho 13 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1100-1150	14	7	1958	56°00′N	145°17′E	25	02	28	055	SW 2	S 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		3.6	18.26	32.99	0	3.6	18.26	32.99	26.25	178	0
10	0	2.33	18.26	32.99	10	2.33	18.26	32.99	26.36	168	0.017
20	〃	1.88	18.27	33.01	20	1.88	18.27	33.01	26.41	163	0.034
30	〃	1.31	18.27	33.01	30	1.31	18.27	33.01	26.45	159	0.050
50	〃	0.88	18.32	33.10	50	0.88	18.32	33.10	26.55	150	0.081
75	5	0.92	18.32	33.10	75	0.92	18.32	33.10	26.55	150	0.119
100	〃	0.89	18.32	33.10	100	0.89	18.32	33.10	26.55	150	0.156
149	〃	0.20	18.34	33.13	150	0.20	18.34	33.13	26.62	143	0.230
196	〃	0.13	18.42	33.28	200	0.13	18.42	33.28	26.73	133	0.299

Table 3. (Continued)

Station Ho 14 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0140–0249	15	7	1958	55°49′N	147°06′E	09	02	03	080	×	×	4	7

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		8.8	18.12	32.74	0	8.8	18.12	32.74	25.40	259	0
10	0	7.62	18.06	32.63	10	7.62	18.06	32.63	25.49	250	0.026
20	〃	4.23	18.13	32.76	20	4.23	18.13	32.76	26.00	202	0.048
30	〃	2.78	18.14	32.77	30	2.78	18.14	32.77	26.15	188	0.068
50	〃	−0.43	18.27	33.01	50	−0.43	18.27	33.01	26.52	153	0.102
75	〃	−1.40	18.33	33.12	75	−1.40	18.33	33.12	26.66	139	0.138
100	〃	−1.41	18.37	33.19	100	−1.41	18.37	33.19	26.72	134	0.173
150	〃	−1.05	18.31	33.08	150	−1.05	18.31	33.08	(26.63)	142	0.242
196	8	1.65	18.47	33.37	200	1.63	18.47	33.37	26.71	135	0.311
299	4	1.24	18.56	33.53	300	1.24	18.56	33.53	26.85	121	0.439
393	〃	1.23	18.58	33.57	400	1.23	18.58	33.57	27.21	87	0.543

Station Ho 15 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1000–1021	15	7	1958	56°00′N	149°00′E	05	05	41	070	×	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		8.4	18.22	32.92	0	8.4	18.22	32.92	25.60	240	0
10	0	8.10	18.23	32.94	10	8.10	18.23	32.94	25.66	234	0.024
20	〃	3.83	18.24	32.95	20	3.83	18.24	32.95	26.20	183	0.045
30	〃	1.30	18.25	32.97	30	1.30	18.25	32.97	26.42	162	0.062
50	〃	−1.02	18.32	33.10	50	−1.02	18.32	33.10	26.64	141	0.092
63	12	−1.60	18.32	33.10	75	−1.61	18.33	33.12	26.66	139	0.127
98	〃	−1.64	18.36	33.17	100	−1.64	18.36	33.17	26.71	135	0.162
147	〃	−0.54	18.42	33.28	150	−0.53	18.42	33.28	26.76	130	0.228
194	12	−0.32	18.43	33.30	200	−0.31	18.43	33.30	26.77	129	0.293

Table 3. (Continued)

Station Ho 16 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0540–0610	16	7	1958	57°00′N	151°00′E	09	02	42	100	×	×	×	15

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle_{st}$	$\triangle D$
0		9.1	18.10	32.70	0	9.1	18.10	32.70	25.32	267	0
10	5	9.84	18.13	32.76	10	9.84	18.13	32.76	(25.25)	273	0.027
20	〃	3.86	18.08	32.66	20	3.86	18.08	32.66	25.97	205	0.051
30	〃	1.49	18.14	32.77	30	1.49	18.14	32.77	26.25	178	0.070
50	〃	−0.57	18.17	32.83	50	−0.57	18.17	32.83	26.40	164	0.104
75	〃	−1.15	18.19	32.86	75	−1.15	18.19	32.86	26.45	159	0.145
96	16	−1.23	18.27	33.01	100	−1.21	18.27	32.01	26.57	148	0.183
144	〃	−0.91	18.32	33.10	150	−0.88	18.33	33.12	26.64	141	0.256
194	16	0.65	18.43	33.30	200	0.65	18.43	33.30	26.72	134	0.324
289	〃	0.61	18.48	33.39							

Station Ho 17 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1335–1430	16	7	1958	57°30′N	153°00′E	03	05	20	093	NE 1	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle_{st}$	$\triangle D$
0		9.4	17.82	32.20	0	9.4	17.82	32.20	24.88	308	0
10	7	9.39	×	×	10	9.39	17.98	32.48	25.11	287	0.030
20	〃	5.30	18.14	32.77	20	5.30	18.14	32.77	25.90	211	0.055
30	〃	3.08	18.14	32.77	30	2.94	18.14	32.77	26.13	190	0.075
50	〃	1.41	18.17	32.83	50	1.41	18.17	32.83	26.30	173	0.111
71	19	−0.41	18.22	32.92	75	−0.39	18.23	32.94	26.48	156	0.152
95	〃	−0.31	18.28	33.03	100	−0.29	18.29	33.04	26.57	148	0.190
142	〃	−0.14	18.35	33.15	150	−0.07	18.36	33.17	26.65	140	0.262
193	18	0.55	18.42	33.28	200	0.56	18.43	33.30	26.72	134	0.331
293	〃	0.87	18.49	33.40	300	0.90	18.50	33.42	26.80	126	0.461
378	〃	1.24									

Table 3. (Continued)

Station Ho 18 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2310-2352	17	7	1958	56°30′N	154°30′E	02	05	02	097	E 2	×	4	14

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		7.5	18.09	32.68	0	7.5	18.09	32.68	25.55	245	0
10	15	6.00	18.11	32.72	10	6.00	18.11	32.72	25.77	224	0.024
19	〃	3.07	18.13	32.76	20	2.97	18.13	32.76	26.12	191	0.044
29	〃	2.06	18.19	32.86	30	2.02	18.19	32.86	26.29	174	0.063
49	〃	1.23	18.21	32.90	50	1.23	18.21	32.90	26.37	167	0.097
64	31	0.14	18.24	32.95	75	0.01	18.25	32.97	26.49	155	0.137
86	〃	-0.12	18.27	33.01	100	-0.11	18.29	33.04	26.55	150	0.175
131	〃	-0.10	18.34	33.13	150	-0.12	×	×			
183	29	-0.17	×	×							

Station Ho 19 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0730-0807	17	7	1958	55°30′N	153°00′E	04	09	01	100	N 2	×	4	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		9.1	18.11	32.72	0	9.1	18.11	32.72	25.33	266	0
9	24	9.03	18.10	32.70	10	8.11	18.10	32.70	25.47	252	0.016
18	〃	3.48	18.15	32.79	20	2.68	18.15	32.79	26.17	186	0.038
27	〃	-0.19	18.15	32.79	30	-0.31	18.16	32.81	26.37	167	0.056
46	〃	-0.90	18.19	32.86	50	-0.91	18.21	32.90	26.47	157	0.088
66	28	-0.94	18.28	33.03	75	-0.81	18.30	33.06	26.58	147	0.126
88	〃	-0.69	18.32	33.10	100	-0.29	18.33	33.12	26.62	143	0.162
132	〃	0.71	18.42	33.28	150	0.76	18.44	33.31	26.71	135	0.232
156	44	0.77	18.44	33.31	200	0.83	18.46	33.35	26.75	131	0.298
227	〃	0.87	18.46	33.35	300	1.16	18.51	33.44	26.80	126	0.426
298	〃	1.16	18.51	33.44	400	1.16	18.52	33.46	26.81	125	0.552
391	〃	1.16	18.52	33.46							

Table 3. (Continued)

Station Ho 20 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0250–0325	18	7	1958	55°00′N	151°00′E	32	05	03	120	×	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		10.1	18.17	32.83	0	10.1	18.17	32.83	25.26	272	0
10	17	9.71	18.16	32.81	10	9.71	18.16	32.81	25.32	267	0.027
19	〃	9.38	18.17	32.83	20	9.01	18.17	32.83	25.42	257	0.053
29	〃	5.73	18.19	32.86	30	5.31	18.20	32.86	25.98	204	0.076
45	〃	−0.98	18.34	33.13	50	−0.87	18.34	33.13	26.67	138	0.111
67	〃	−0.53	18.36	33.17	75	−1.03	18.38	33.21	26.72	134	0.145
85	32	−1.51	18.41	33.26	100	−1.11	18.44	33.31	26.82	124	0.176
127	〃	−0.29	18.49	33.40							
278	32	0.93	18.53	33.48							
264	〃	0.74	18.56	33.53							

Station Ho 21 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1330–1420	18	7	1958	54°00′N	153°00′E	34	05	01	090	N 1	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		9.4	18.14	32.77	0	9.4	18.14	32.78	25.33	266	0
10	0	9.44	18.16	32.81	10	9.44	18.16	32.81	25.36	263	0.027
20	〃	3.37	18.19	32.86	20	3.37	18.19	32.86	26.17	186	0.049
30	〃	2.10	18.20	32.88	30	2.10	18.20	32.88	26.30	173	0.067
50	〃	1.15	18.27	33.01	50	1.15	18.27	33.01	26.46	158	0.100
75	2	−0.32	18.30	33.06	75	−0.32	18.30	33.06	26.58	147	0.138
97	〃	−0.07	18.36	33.17	100	−0.08	18.36	33.17	26.65	140	0.174
150	〃	−0.23	18.36	33.17	150	−0.23	18.36	33.17	26.67	138	0.244
103	5	−0.05	18.40	33.24	200	0.56	18.43	33.30	26.74	132	0.311
203	〃	0.57	18.43	33.30	300	1.34	18.51	33.41	26.79	127	0.440
277	〃	1.35	18.50	33.42	400	1.28	18.57	33.55	26.89	117	0.562
399	〃	1.28	18.57	33.55							

Table 3. (Continued)

Station Ho 22 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0300–0333	19	7	1958	52°00′N	155°00′E	36	14	02	110	N 3	×	4	14

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		10.2	17.86	32.27	0	10.2	17.86	32.27	24.80	316	0
9	28	9.93	17.88	32.30	10	9.53	17.91	32.36	24.99	298	0.031
18	〃	6.79	18.16	32.81	20	6.24	18.16	32.81	25.83	218	0.057
26	〃	4.57	18.17	32.83	30	4.05	18.18	32.85	26.09	193	0.077
44	〃	0.93	18.23	32.94	50	0.81	18.23	32.94	26.42	162	0.113
61	35	0.57	18.23	32.94	75	0.36	18.24	32.95	26.46	158	0.153
82	〃	0.26	18.24	32.95	100	0.17	18.25	32.97	26.49	155	0.192
123	〃	0.06	18.27	33.01	150	0.09	18.30	33.06	26.56	149	0.268
179	35	0.12	18.32	33.10							

Station Ho 23 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0630–0700	20	7	1958	52°30′N	153°00′E	32	05	02	090	NNW 2	×	4	14

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		9.9	18.22	32.92	0	9.9	18.22	32.92	25.35	264	0
10	0	9.75	18.22	32.92	10	9.75	18.22	32.92	25.39	260	0.026
20	〃	4.39	18.26	32.99	20	4.39	18.26	32.99	26.17	186	0.049
30	〃	2.42	18.28	33.03	30	2.42	18.28	33.03	26.38	166	0.066
50	〃	0.91	18.29	33.04	50	0.91	18.29	33.04	26.51	154	0.098
75	〃	0.30	18.32	33.10	75	0.30	18.32	33.10	26.58	147	0.136
100	〃	0.19	18.34	33.13	100	0.19	18.34	33.13	26.62	143	0.172
150	〃	0.05	18.37	33.19	150	0.05	18.37	33.19	26.67	138	0.243
200	4	0.60	18.42	33.28	200	0.60	18.42	33.28	26.72	134	0.311
299	〃	1.28	18.50	33.42	300	1.28	18.50	33.42	26.78	128	0.442
400	〃	1.37	18.56	33.53	400	1.37	18.56	33.53	26.86	120	0.566
445	2	1.54	18.63	33.66	500	1.56	18.63	33.66	26.95	112	0.683
595	〃	1.90	18.73	33.84	600	1.90	18.73	33.84	27.07	100	0.791

Table 3. (Continued)

Station Ho 24 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1700-1810	20	7	1958	52°20′N	151°00′E	03	05	02	090	E 1	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		9.3	18.13	32.76	0	9.3	18.13	32.76	25.33	266	0
10	4	9.41	18.13	32.76	10	9.41	18.13	32.76	25.32	267	0.027
20	〃	5.39	18.22	32.92	20	5.39	18.22	32.96	26.00	202	0.050
30	〃	2.11	18.26	32.99	30	2.11	18.26	32.99	26.38	166	0.069
50	〃	0.38	18.27	33.01	50	0.38	18.27	33.01	26.50	154	0.101
75	5	0.02	18.32	33.10	75	0.02	18.32	33.10	69.60	145	0.138
99	〃	0.01	18.35	33.15	100	0.01	18.35	33.15	26.64	141	0.174
149	〃	0.04	18.42	33.28	150	0.04	18.42	33.28	26.74	132	0.242
194	4	1.10	18.49	33.40	200	1.10	18.49	33.40	26.78	128	0.307
296	〃	1.40			300	1.40	18.55	33.51	26.84	120	0.431
394	〃	1.36	18.61	33.62	400	1.37	18.61	33.62	26.93	114	0.548
494	〃	1.59	18.68	33.75	500	1.59	18.68	33.75	27.01	106	0.659
592	8	1.70	18.75	33.87	600	1.72	18.76	33.89	27.12	96	0.762
796	〃	2.22	18.91	34.16	800	2.22	18.91	34.16	27.30	79	0.944
988	〃	2.34	18.99	34.31	1000	2.34	18.99	33.31	27.41	68	1.100

Station Ho 25 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0330-0525	21	7	1958	51°00′N	151°00′E	10	09	03	110	ESE 4	ESE 4	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		9.3	18.13	32.76	0	9.3	18.13	32.76	25.33	260	0
10	18	9.15	18.13	32.76	10	9.15	18.13	32.76	25.36	263	0.027
19	〃	6.17	×	×	20	6.00	18.17	32.83	25.86	215	0.050
29	〃	4.51	18.21	32.90	30	4.31	18.21	32.90	26.11	192	0.071
48	〃	1.04	18.27	33.01	50	0.86	18.27	33.01	26.48	156	0.106
68	25	−0.75	18.29	33.04	75	−0.65	18.31	33.08	26.61	144	0.143
91	〃	−0.44	18.34	33.13	100	−0.41	18.35	33.15	26.66	139	0.179
136	〃	−0.29	18.39	33.22	150	0.04	18.41	33.26	26.72	135	0.247
179	27	0.77	18.45	33.33	200	0.78	18.47	33.37	26.77	129	0.313
283	〃	0.84	18.53	33.48	300	0.86	18.54	33.50	26.86	120	0.437
371	〃	0.93	18.59	33.59	400	0.98	18.60	33.60	26.94	113	0.554
461	37	1.07	18.62	33.64	500	1.27	18.64	33.68	26.98	109	0.666
524	〃	1.36	18.69	33.77	600	1.61	18.74	33.86	27.10	98	0.771
715	〃	2.01	18.83	34.02	300	2.12	18.88	34.11	27.27	81	0.955
918	〃	2.26	18.95	34.24	1000	2.28	18.98	34.29	27.40	69	1.113
1100	〃	2.31	19.02	34.36							

Table 3. (Continued)

Station Ho 26 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0615-0725	22	7	1958	51°00′N	153°00′E	09	05	20	082	SSE 1	SW 1	4	14

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Deptn (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		8.6	18.15	32.79	0	8.6	18.15	32.79	25.47	252	0
10	7	8.54	18.16	32.81	10	8.54	18.16	32.81	25.50	249	0.025
20	〃	4.41	18.24	32.95	20	4.41	18.24	32.95	26.13	190	0.047
30	〃	1.69	18.27	33.01	30	1.69	18.27	33.01	26.42	162	0.065
50	〃	0.82	18.32	33.10	50	0.82	18.32	33.10	26.55	150	0.096
75	12	0.74	18.32	33.10	75	0.74	18.32	33.10	26.56	149	0.133
100	〃	0.25	18.32	33.10	100	0.25	18.32	33.10	26.58	147	0.170
150	〃	0.47	18.37	33.19	150	0.47	18.37	33.19	26.64	141	0.242
200	0	0.54	18.39	33.22	200	0.54	18.39	33.22	26.68	137	0.311
297	〃	1.13	18.48	33.39	300	1.14	18.48	33.39	26.76	130	0.444
398	〃	1.37	18.53	33.48	400	1.38	18.53	33.48	26.82	124	0.571
488	19	1.55	18.61	33.62	500	1.60	18.63	33.66	66.94	113	0.690
584	〃	2.01	18.75	33.87							

Station Ho 27 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	SeaS	well	C	Tr
0010-0100	23	7	1958	51°00′N	155°00′E	31	02	01	120	NW 1	×	4	13

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		9.7	18.14	32.77	0	9.7	18.14	32.77	25.29	269	0
10	0	5.84	18.23	32.94	10	5.84	18.23	32.94	25.97	243	0.026
20	〃	4.02	18.25	32.97	20	4.02	18.25	32.97	26.20	183	0.047
30	〃	2.48	18.27	33.01	30	2.48	18.27	33.01	26.34	170	0.065
50	〃	1.14	18.30	33.06	50	1.14	18.30	33.06	26.51	154	0.097
75	〃	0.56	18.32	33.10	75	0.56	18.32	33.10	26.58	147	0.135
100	〃	0.55	18.35	33.15	100	0.55	18.35	33.15	26.62	143	0.171
150	〃	0.60	18.39	33.22	150	0.60	18.39	33.22	26.68	137	0.241
190	2	0.56	18.42	33.28	200	0.61	18.43	33.30	26.72	134	0.309
300	〃	1.10	18.50	33.42	300	1.10	18.50	33.42	26.79	127	0.439
400	〃	1.29	18.56	33.53	400	1.29	18.56	33.53	26.86	120	0.563
496	〃	1.51	18.63	33.66	500	1.52	18.63	33.66	26.93	114	0.681
599	〃	1.74	18.70	33.78	600	1.74	18.70	33.78	27.03	104	0.792
796	〃	2.35	18.98	34.29	800	2.35	18.98	34.29	27.40	69	0.972

Table 3. (Continued)

Station Ho 28 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0900–1016	23	7	1958	50°00′N	154°00′E	×	×	02	090	NE 1	SW 1	5	10

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		9.5	18.17	32.83	0	9.5	18.17	32.83	25.35	264	0
10	0	7.52	18.17	32.83	10	7.52	18.17	32.83	25.66	234	0.025
20	〃	5.87	18.23	32.94	20	5.89	18.23	32.94	25.97	205	0.047
30	〃	2.87	18.27	33.01	30	2.87	18.29	33.01	26.33	171	0.066
50	〃	2.00	18.29	33.04	50	2.00	18.29	33.04	26.43	161	0.099
75	0	0.82	18.32	33.10	75	0.82	18.32	33.10	26.56	149	0.138
100	〃	0.42	18.34	33.13	100	0.42	18.34	33.13	26.61	144	0.174
150	〃	0.57	18.39	33.22	150	0.57	18.39	33.22	26.67	138	0.245
200	1	0.66	18.41	33.26	200	0.66	18.41	33.26	26.69	136	0.313
300	〃	0.96	18.46	33.35	300	0.96	18.46	33.35	26.74	132	0.447
388	〃	1.27	18.51	33.44	400	1.26	18.51	33.44	26.79	127	0.577
495	〃	1.16	18.54	33.50	500	1.20	18.55	33.51	26.85	121	0.702
600	1	1.56	18.65	33.69	600	1.56	18.65	33.69	26.98	109	0.818
799	〃	2.33	18.86	34.07	800	2.33	18.86	34.07	27.22	86	1.018
1000	〃	2.41	18.96	34.25	1000	2.41	18.96	34.25	27.35	74	1.188
1198	〃	2.22	19.04	34.40	1200	2.22	19.04	34.40	27.50	60	1.334

Station Ho 29 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1700–1828	24	7	1958	48°22′N	150°30′E	25	09	02	084	W 3	SW 3	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		7.9	17.78	32.12	0	7.9	17.78	32.12	25.05	292	0
10	17	7.90	17.78	32.12	10	7.90	17.78	32.12	25.05	292	0.029
19	〃	7.17	17.85	32.25	20	6.67	17.86	32.27	25.26	272	0.057
29	〃	1.90	17.95	32.43	30	1.80	17.96	32.43	25.90	211	0.082
48	〃	−0.31	18.17	32.83	50	−0.35	18.18	32.85	26.41	163	0.119
70	21	−0.72	18.24	32.95	75	−0.75	18.24	32.96	26.51	154	0.159
90	〃	−0.72	18.24	32.95	100	−0.71	18.26	32.99	26.53	152	0.197
140	〃	−0.69	18.36	33.17	150	−0.49	18.37	33.19	26.69	136	0.269
182	25	0.12	18.41	33.26	200	0.24	18.43	33.30	26.74	132	0.336
283	〃	0.73	18.50	33.42	300	0.78	18.51	33.44	26.82	124	0.464
371	〃	0.98	18.55	33.51	400	1.04	18.56	33.53	26.88	118	0.585
481	〃	1.21	18.63	33.66	500	1.26	18.64	33.68	26.98	109	0.699
557	28	1.40	18.68	33.75	600	1.54	18.72	33.82	27.08	99	0.804
759	〃	2.12	18.84	34.04	800	2.16	18.86	34.07	27.24	84	0.992
942	〃	2.32	18.94	34.22	1000	2.29	18.96	34.25	27.37	72	1.156
1150	〃	2.23	19.01	34.34							

Table 3. (Continued)

Station Ho 30 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0300-0508	25	7	1958	48°22′N	148°30′E	25	09	03	100	W 2	NW 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		7.8	17.83	32.21	0	7.8	17.83	32.21	25.14	284	0
10	10	6.71	17.87	32.29	10	6.71	17.87	32.29	25.33	266	0.028
20	〃	6.75	17.90	32.34	20	6.75	17.90	32.34	25.38	261	0.054
30	〃	3.46	18.12	32.74	30	3.46	18.12	32.74	26.05	199	0.077
49	〃	0.95	18.29	33.04	50	0.95	18.29	33.04	26.51	154	0.112
75	10	0.68	18.34	33.13	75	0.68	18.34	33.13	26.59	146	0.150
99	〃	1.05	18.38	33.21	100	1.06	18.38	33.21	26.62	143	0.187
149	〃	0.59	18.41	33.26	150	0.60	18.41	33.26	26.70	135	0.256
190	16	1.07	18.46	33.35	200	1.07	18.46	33.35	26.74	132	0.322
294	〃	1.09	18.48	33.39	300	1.09	18.48	33.39	26.78	128	0.452
398	〃	1.08	18.53	33.48	400	1.08	18.53	33.48	26.83	123	0.578
438	〃	0.81	18.55	33.51	500	0.81	18.55	33.51	26.88	118	0.699
588	16	0.76	18.60	33.60	600	0.81	18.61	33.62	26.96	119	0.815
794	〃	1.66	18.76	33.89	800	1.68	18.75	33.87	27.11	97	1.027
988	〃	2.12	18.56	33.53							

Station Ho 31 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1505-1727	25	7	1958	47°00′N	149°00′E	36	02	02	083	N 2	N 1	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		9.8	17.85	32.25	0	9.8	17.85	32.25	24.86	310	0
10	5	9.31	17.85	32.25	10	9.31	17.85	32.25	24.90	307	0.031
20	〃	9.37	17.85	32.25	20	9.37	17.85	32.25	24.93	304	0.062
30	〃	7.72	17.96	32.45	30	7.72	17.96	32.45	25.33	266	0.090
50	〃	0.60	18.07	32.65	50	0.60	18.07	32.65	26.20	183	0.135
70	21	0.74	18.22	32.92	75	0.64	18.24	32.95	26.45	159	0.178
94	〃	0.31	18.28	33.03	100	0.30	18.29	32.04	26.53	152	0.217
140	〃	0.23	18.36	33.17	150	0.11	18.36	33.17	26.65	140	0.290
192	22	-0.42	18.36	33.17	200	-0.34	18.37	33.19	26.68	137	0.359
279	〃	0.44	18.40	33.24	300	0.56	18.41	33.26	26.70	135	0.495
365	〃	1.07	18.46	33.35	400	1.13	18.48	33.39	26.76	130	0.628
480	〃	1.26	18.53	33.48	500	1.24	18.54	33.50	26.84	122	0.755
533	23	1.17	18.60	33.60	600	1.31	18.64	33.68	26.94	109	0.872
702	〃	1.49	18.71	33.80	800	1.77	18.78	33.93	27.15	93	1.078
893	〃	2.04	18.84	34.04	1000	2.13	18.90	34.15	27.30	79	1.258
1067	〃	2.19	18.94	34.22							

Table 3. (Continued)

Station Ho 32 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0105-0215	27	7	1958	45°53′N	148°04′E	20	05	01	100	E 2	×	5	9

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		9.8	18.21	32.90	0	9.8	18.21	32.90	25.37	262	0
10	2	9.41	18.21	32.90	10	9.41	18.21	32.90	25.42	257	0.026
20	〃	7.92	18.32	33.10	20	7.92	18.32	33.10	25.81	220	0.050
30	〃	5.88	18.46	33.35	30	5.88	18.46	33.35	26.28	175	0.070
50	〃	4.01	18.44	33.31	50	4.01	18.44	33.31	26.47	157	0.103
75	0	2.39	18.43	33.30	75	2.39	18.43	33.30	26.60	145	0.141
100	〃	2.30	18.42	33.28	100	2.30	18.42	33.28	26.59	146	0.177
150	〃	0.78	18.38	33.21	150	0.78	18.38	33.21	26.64	141	0.249
193	10	-0.10	18.40	33.24	200	-0.04	18.41	33.26	26.73	133	0.318
293	〃	0.68	18.47	33.37	300	0.70	18.48	33.39	26.79	127	0.448
397	〃	0.95	18.54	33.50	400	0.96	18.54	33.50	26.85	121	0.572
495	〃	1.36	18.63	33.66	500	1.36	18.63	33.66	26.96	111	0.689
578	14	1.36	18.70	33.78	600	1.42	18.71	33.80	27.07	100	0.796
767	〃	1.97	18.83	34.02	800	1.99	18.84	34.04	27.22	86	0.986
963	〃	2.17	18.94	34.22	1000	2.18	18.96	34.25	27.38	71	1.150
1164	〃	2.21	19.01	34.34							

Station Ho 33 (3rd)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1030-1203	27	7	1958	46°00′N	146°00′E	×	×	×	090	E 1	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		12.1	18.03	32.57	0	12.1	18.03	32.57	24.71	325	0
10	0	12.11	18.07	32.65	10	12.11	18.07	32.65	24.76	320	0.032
20	〃	8.73	18.17	32.83	20	8.73	18.17	32.83	25.48	251	0.061
30	〃	3.23	18.42	33.28	30	3.23	18.42	33.28	26.51	154	0.081
50	〃	0.57	18.40	33.24	50	0.57	18.40	33.24	26.68	137	0.109
75	7	-0.14	18.39	33.22	75	-0.14	18.39	33.22	26.71	135	0.143
98	〃	1.03	18.48	33.39	100	1.03	18.48	33.39	26.77	129	0.176
149	〃	1.16	18.49	33.40	150	1.16	18.49	33.40	26.78	128	0.250
191	17	1.28	18.51	33.44	200	1.31	18.52	33.46	26.81	125	0.304
288	〃	1.55	18.57	33.55	300	1.49	18.57	33.55	26.85	121	0.427
389	〃	0.88	18.57	33.55	400	0.90	18.58	33.57	26.92	115	0.545
489	〃	1.05	18.61	33.62	500	1.09	18.62	33.64	26.96	111	0.659
581	19	1.27	18.67	33.73	600	1.34	18.68	33.75	27.03	104	0.768
769	〃	1.99	18.83	34.02	800	2.01	18.84	34.04	27.22	86	0.962
966	〃	2.14	18.92	34.18	1000	2.17	18.94	34.22	27.35	74	1.130
1099	〃	2.27	18.99	34.31							

Table 3. (Continued)

IV. Fouth cruise

Station Ho 1 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0300–0435	7	8	1958	42°33′N	145°00′E	25	02	02	190	SW 2	ESE 1	3	10

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		17.3	18.12	32.74	0	17.3	18.12	32.74	23.72	419	0
10	0	15.62	18.12	32.74	10	15.62	18.12	32.74	24.11	382	0.040
20	〃	12.13	18.14	32.77	20	12.13	18.14	32.77	24.84	312	0.075
30	〃	8.79	18.19	32.86	30	8.79	18.19	32.86	25.50	249	0.104
50	〃	2.92	18.35	33.15	50	2.92	18.35	33.15	26.44	160	0.155
75	0	1.60	18.36	33.17	75	1.60	18.36	33.17	26.56	149	0.194
100	〃	1.14	18.36	33.17	100	1.14	18.36	33.17	26.60	145	0.231
150	〃	0.97	18.41	33.26	150	0.97	18.41	33.26	26.68	137	0.301
200	〃	1.68	18.50	33.42	200	1.68	18.50	33.42	26.75	131	0.368
299	4	2.41	18.65	33.69	300	2.42	18.65	33.69	26.90	117	0.493
398	〃	2.81	18.72	33.82	400	2.81	18.72	33.82	26.99	108	0.608
494	3	3.08	18.83	34.02	500	3.08	18.83	34.02	27.12	96	0.713
600	〃	3.15	18.86	34.07	600	3.15	18.86	34.07	27.16	92	0.811
800	〃	2.99	18.94	34.22	800	2.99	18.94	34.22	27.29	80	0.993
988	〃	2.78	18.98	34.29	1000	2.78	18.98	34.29	27.36	73	1.157
1200	〃	2.59	19.00	34.33	1200	2.59	19.00	34.33	27.40	69	1.313

Station Ho 2 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1330–1426	7	8	1958	43°10′N	146°30′E	36	02	44	130	SW 1	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		13.1	18.17	32.83	0	13.1	18.17	32.83	24.72	324	0
10	7	12.52	18.15	32.79	10	12.52	18.15	32.79	24.80	316	0.032
20	〃	7.59	18.20	32.88	20	7.59	18.20	32.88	25.69	231	0.060
30	〃	5.71	18.25	32.97	30	5.71	18.25	32.97	26.00	202	0.082
50	〃	3.35	18.32	33.10	50	3.35	18.32	33.10	26.35	169	0.119
73	12	1.46	18.36	33.17	75	1.42	18.36	33.17	26.57	148	0.159
98	〃	1.03	18.40	33.24	100	1.03	18.40	33.24	26.66	139	0.195
147	〃	1.04	18.40	33.24	150	1.05	18.40	33.24	26.66	139	0.230
180	21	1.13	18.41	33.26	200	1.25	18.46	33.35	26.72	134	0.298
287	〃	1.85	18.60	33.60	300	2.00	18.62	33.64	26.90	117	0.362
385	〃	2.90	18.73	33.84	400	2.96	18.74	33.86	27.00	107	0.476
477	〃	3.14	18.80	33.96	500	3.14	18.82	34.00	27.10	98	0.581
560	21	3.14	18.87	34.09	600	3.11	18.90	34.15	27.21	87	0.677
760	〃	2.96	18.96	34.25	800	2.90	18.97	34.27	27.33	76	0.849
953	〃	2.71	18.99	34.31	1000	2.64	19.02	34.36	27.92	21	0.957
1155	〃	2.47	19.06	34.43							

Table 3. (Continued)

Station Ho 3 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2315–0025	7	8	1958	43°45′N	148°00′E	34	02	45	145	W 1	×	4	10

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		11.8	18.22	32.92	0	11.8	18.22	32.92	25.03	294	0
10	0	10.84	18.22	32.92	10	10.84	18.22	32.92	25.20	278	0.029
20	〃	8.87	18.22	32.92	20	8.87	18.22	32.92	25.52	248	0.055
30	〃	6.45	18.25	32.97	30	6.45	18.25	32.97	25.91	211	0.078
50	〃	2.64	18.22	32.92	50	2.64	18.22	32.92	26.28	175	0.117
75	0	1.30	18.35	33.15	75	1.30	18.35	33.15	26.55	150	0.158
100	〃	0.98	18.36	33.17	100	0.98	18.36	33.17	26.60	145	0.195
150	〃	1.53	18.50	33.42	150	1.53	18.50	33.42	26.76	130	0.264
196	2	2.38	18.63	33.66	200	2.39	18.63	33.66	26.89	117	0.336
300	〃	3.06	18.81	33.98	300	3.06	18.81	33.98	27.09	98	0.445
393	〃	3.14	18.85	34.05	400	3.14	18.85	34.05	27.14	94	0.543
500	〃	3.12	18.91	34.16	500	3.12	18.91	34.16	27.22	86	0.636
602	0	3.01	18.94	34.22	600	3.01	18.94	34.22	27.29	80	0.723
798	〃	2.86	18.99	34.31	800	2.86	18.99	34.31	27.38	71	0.739
991	〃	2.62	19.05	34.42	1000	2.61	19.05	34.42	27.48	62	0.883
1200	〃	2.36	19.06	34.43	1200	2.36	19.06	34.43	27.51	59	1.015

Station Ho 4 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1135–1243	8	8	1958	44°30′N	150°00′E	13	02	45	120	SW 1	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		12.3	18.24	32.95	0	12.3	18.24	32.95	24.96	301	0
10	6	10.43	18.25	32.97	10	10.43	18.25	32.97	25.32	267	0.029
20	〃	8.16	18.27	33.01	20	8.16	18.27	33.01	25.70	230	0.054
30	〃	5.20	18.34	33.13	30	5.20	18.34	33.13	26.20	183	0.074
50	〃	2.56	18.34	33.13	50	2.56	18.34	33.13	26.46	158	0.092
75	6	1.43	18.37	33.19	75	1.43	18.37	33.19	26.59	146	0.130
99	〃	1.12	18.40	33.24	100	1.12	18.40	33.24	26.66	139	0.166
149	〃	1.12	18.45	33.33	150	1.12	18.45	33.33	26.72	134	0.235
196	16	2.12	18.58	33.57	200	2.16	18.59	33.59	26.85	121	0.299
298	9	2.85	18.78	33.93	300	2.85	18.78	33.93	27.06	101	0.412
392	〃	3.13	18.85	34.05	400	3.12	18.86	34.07	27.15	93	0.511
495	〃	3.03	18.92	34.18	500	3.09	18.92	34.18	27.24	83	0.602
587	15	2.99	18.96	34.25	600	2.98	18.97	34.27	27.32	77	0.686
785	〃	2.76	19.02	34.36	800	2.73	19.02	34.36	27.42	67	0.840
978	〃	2.52	19.05	34.42	1000	2.49	19.05	34.42	27.49	61	0.978

Table 3. (Continued)

Station Ho 5 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0240-0457	9	8	1958	45°38′N	151°20′E	11	02	03	120	SE 1	SW 2	5	7

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		7.7	18.26	32.99	0	7.7	18.26	32.99	25.70	230	0
10	5	6.61	18.23	38.94	10	6.61	18.23	32.94	25.87	214	0.022
20	〃	4.39	18.23	32.94	20	4.39	18.23	32.94	26.12	191	0.043
30	〃	3.87	18.24	32.95	30	3.87	18.24	32.95	26.19	184	0.062
50	〃	2.44	18.32	33.10	50	2.44	18.32	33.10	26.44	160	0.097
75	5	1.41	18.36	33.17	75	1.41	18.36	33.17	26.58	147	0.135
99	〃	1.05	18.36	33.17	100	1.05	18.36	33.17	26.60	145	0.172
149	〃	1.06	18.43	33.30	150	1.06	18.43	33.30	26.70	135	0.242
193	5	1.18	18.50	33.42	200	1.20	18.50	33.42	26.79	127	0.307
305	〃	1.54	18.55	33.51	300	1.54	18.55	33.51	26.83	123	0.433
398	〃	2.69	18.72	33.82	400	2.69	18.72	33.82	27.00	107	0.550
495	〃	2.86	18.81	33.98	500	2.86	18.81	33.98	27.11	97	0.655
589	6	2.90	18.86	34.07							

Station Ho 6 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1854-1950	9	8	1958	47°14′N	153°15′E	23	05	02	100	SW 3	×	5	7

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle st$	$\triangle D$
0		9.4	18.22	32.92	0	9.4	18.22	32.92	25.44	255	0
10	15	9.24	18.24	32.95	10	9.24	18.24	32.95	25.50	249	0.025
19	〃	8.95	18.33	33.12	20	8.70	18.33	33.12	25.71	230	0.050
29	〃	6.50	18.33	33.12	30	6.35	18.33	33.12	26.04	198	0.071
48	〃	3.46	18.35	33.15	50	3.36	18.35	33.15	26.40	164	0.108
69	23	2.69	18.35	33.15	75	2.00	18.35	33.15	62.51	154	0.148
83	〃	1.53	18.36	33.17	100	1.40	18.36	33.17	26.57	148	0.186
138	〃	1.37	18.40	33.24	150	1.44	18.44	33.31	26.69	136	0.257
175	29	1.69	18.51	33.44	200	2.12	18.58	33.50	26.85	121	0.321
271	〃	3.05	18.73	33.84	300	3.05	18.76	33.90	27.01	106	0.436
375	〃	3.16	18.79	33.95	400	3.17	18.83	34.02	27.10	98	0.540
447	34	3.18	18.85	34.05	500	3.18	18.86	34.07	27.15	93	0.638

Table 3. (Continued)

Station Ho 7 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0617–0737	10	8	1958	48°27′N	154°47′E	21	09	46	060	SW 3	SW 3	6	10

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		3.9	18.41	33.26	0	3.9	18.41	33.26	26.43	161	0
10	14	3.50	18.40	33.24	10	3.50	18.40	33.24	26.47	157	0.016
19	〃	3.50	18.41	33.26	20	3.47	18.41	33.26	26.48	156	0.032
29	〃	3.22	18.41	33.26	30	3.24	18.41	33.26	26.50	154	0.047
49	〃	3.49	18.41	33.26	50	3.48	18.41	33.26	26.49	155	0.079
70	22	3.34	18.41	33.26	75	3.29	18.41	33.26	26.50	154	0.118
93	〃	3.02	18.41	33.26	100	2.94	18.41	33.26	26.52	153	0.156
139	〃	2.44	18.48	33.39	150	2.38	18.49	33.40	26.69	136	0.229
194	14	2.14	18.54	33.51							

Station Ho 8 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1450–1520	10	8	1958	49°31′N	155°42′E	21	09	47	080	SW 2	SW 2	7	6

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		5.7	18.27	33.01	0	5.7	18.27	33.01	26.03	199	0
10	11	5.46	18.27	33.01	10	5.46	18.27	33.01	26.07	195	0.020
20	〃	5.33	18.27	33.01	20	5.33	18.27	33.01	26.08	194	0.039
29	〃	5.20	18.27	33.01	30	5.15	18.27	33.01	26.10	192	0.059
49	〃	2.82	18.33	33.12	50	2.75	18.33	33.12	26.42	162	0.090
70	21	1.85	18.39	33.22	75	1.60	18.40	33.24	26.61	144	0.129
93	〃	0.97	18.42	33.28	100	0.88	18.43	33.30	26.70	135	0.164
140	〃	1.14	18.48	33.39	150	1.40	18.49	33.40	26.76	130	0.230

Table 3. (Continued)

Station Ho 9 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2335-0025	10	8	1958	50°16′N	154°21′E	27	02	02	090	×	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		8.8	18.22	32.92	0	8.8	18.22	32.92	25.53	247	0
10	15	7.21	18.23	32.94	10	7.21	18.23	33.94	25.79	222	0.024
19	〃	5.66	18.26	32.99	20	5.66	18.26	32.99	26.02	200	0.045
29	〃	5.31	18.27	33.01	30	5.09	18.27	33.01	26.11	192	0.065
48	〃	2.92	18.34	33.13	50	2.76	18.34	33.13	26.44	160	0.100
65	30	2.31	18.37	33.19	75	2.30	18.37	33.19	26.51	154	0.140
87	〃	1.99	18.37	33.19	100	1.80	18.39	33.22	26.59	146	0.177
130	〃	1.21	18.41	33.26	150	1.10	18.42	33.28	26.69	136	0.248
170	32	0.84	18.42	33.28	200	0.82	18.45	33.33	26.73	133	0.316
253	〃	1.09	18.48	33.39	300	1.25	18.52	33.46	26.81	125	0.465
361	〃	1.34	18.57	33.55	400	1.38	18.59	33.59	26.90	117	0.586
449	38	1.47	18.60	33.60	500	1.46	18.62	33.64	26.93	114	0.702

Station Ho 10 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0950-1050	11	8	1958	51°11′N	154°26′E	25	05	46	080	×	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		9.7	18.17	32.83	0	9.7	18.17	32.83	25.33	266	0
10	0	9.22	18.17	32.83	10	9.22	18.17	32.83	25.40	259	0.026
20	〃	8.82	18.17	32.83	20	8.82	18.17	32.83	25.45	254	0.052
30	〃	5.36	18.27	33.01	30	5.36	18.27	33.01	26.06	196	0.075
50	〃	5.12	18.29	33.04	50	5.12	18.29	33.04	26.14	189	0.114
75	0	0.84	18.36	33.17	75	0.84	18.36	33.17	26.61	144	0.143
100	〃	0.80	18.37	33.19	100	0.80	18.37	33.19	26.62	143	0.179
150	〃	0.71	18.42	33.28	150	0.71	18.42	33.28	26.70	135	0.249
200	0	0.82	18.48	33.39	200	0.82	12.48	33.39	26.78	128	0.315
292	〃	1.27	18.56	33.53	300	1.28	18.57	33.55	26.89	117	0.438
391	〃	1.46	18.63	33.66	400	1.49	18.64	33.68	26.98	109	0.552
396	〃	1.77	18.72	33.82	500	1.80	18.73	33.84	27.08	99	0.657

Table 3. (Continued)

Station Ho 10' (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Lougitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0930-1015	12	8	1958	51°22′N	155°14′E	13	19	03	110	×	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
		9.8	18.09	32.68	0	9.8	18.09	32.68	25.20	278	0
10	10	7.82	18.15	32.80	10	7.82	18.15	32.80	25.59	241	0.026
20	〃	6.27	18.17	32.83	20	6.27	18.17	32.83	25.81	220	0.049
30	〃	3.74	18.29	33.04	30	3.74	18.29	33.04	26.28	166	0.069
49	〃	2.44	18.32	33.10	50	2.44	18.32	33.10	26.44	160	0.102
74	11	1.25	18.34	33.13	75	1.25	18.34	33.13	26.55	150	0.141
98	11	0.42	18.38	33.21	100	0.42	18.38	33.21	26.67	136	0.176

Station Ho 11 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0220-0307	15	8	1958	51°59′N	155°40′E	21	09	02	110	×	×	4	15

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		11.0	17.92	32.38	0	11.0	17.92	32.38	24.74	322	0
10	9	10.80	17.92	32.38	10	10.80	17.92	32.38	24.79	317	0.032
20	〃	10.63	17.92	32.38	20	10.63	17.92	32.38	24.82	314	0.064
30	〃	10.66	17.94	32.41	30	10.66	17.94	32.41	28.84	312	0.085
49	〃	4.57	18.22	32.92	50	4.35	18.22	32.92	26.11	192	0.116
74	11	0.95	18.29	33.04	75	0.95	18.29	32.04	26.50	154	0.160
98	〃	0.62	18.33	33.12	100	0.61	18.33	33.12	26.58	147	0.197
148	〃	0.72	18.38	33.21	150	0.73	18.38	33.21	26.65	140	0.269

Table 3. (Continued)

Station Ho 12 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0900-0929	17	8	1958	50°35′N	154°45′E	33	02	02	110	×	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		10.4	18.22	32.92	0	10.4	18.22	32.92	25.28	270	0
10	7	9.44	18.19	32.86	10	9.44	18.19	32.86	25.39	260	0.027
20	〃	8.44	18.25	32.97	20	8.44	18.25	32.97	25.63	237	0.052
30	〃	1.55	18.32	33.10	30	1.55	18.32	33.10	26.50	154	0.071
50	〃	0.84	18.35	33.15	50	0.84	18.35	33.15	26.60	145	0.101
74	11	0.40	18.36	33.17	75	0.40	18.36	33.17	26.63	142	0.137
98	〃	0.41	18.38	33.21	100	0.41	18.38	33.21	26.65	140	0.173
147	〃	0.41	18.38	33.21	150	0.41	18.38	33.21	26.65	140	0.243

Station Ho 13 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1035-1137	19	8	1958	49°20′N	152°45′E	14	02	44	080	×	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		10.0	18.24	32.95	0	10.0	18.24	32.95	25.39	260	0
10	3	9.58	18.19	32.86	10	9.58	18.19	32.86	25.38	261	0.026
20	〃	8.38	18.19	32.86	20	8.38	18.19	32.86	25.55	245	0.052
30	〃	6.55	18.22	32.92	30	6.55	18.22	32.92	25.86	215	0.075
50	〃	6.19	18.25	32.97	50	6.19	18.25	32.97	25.95	207	0.118
73	13	1.78	18.41	33.26	75	1.75	18.41	33.26	26.62	143	0.162
97	〃	0.96	18.41	33.26	100	0.93	18.41	33.26	26.68	137	0.197
146	〃	1.04	18.42	33.28	150	1.06	18.43	33.30	26.70	135	0.265
196	5	1.21	18.49	33.40	200	1.22	18.50	33.42	26.78	128	0.331
300	〃	1.34	18.55	33.51	300	1.34	18.55	33.51	26.85	121	0.456
390	〃	1.41	18.63	33.66	400	1.41	18.62	33.64	26.94	113	0.574
486	〃	1.43	18.58	33.57							

Table 3. (Continued)

Station Ho 14 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
2051–2148	19	8	1958	48°21′N	151°13′E	09	09	02	120	×	×	4	9

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		12.6	17.77	32.11	0	12.6	17.77	32.11	24.26	367	0
10	12	12.46	17.77	32.11	10	12.46	17.77	32.11	24.29	365	0.037
20	〃	11.87	17.82	32.20	20	11.87	17.82	32.20	24.47	348	0.073
29	〃	5.43	17.87	32.29	30	5.48	17.88	32.30	25.51	249	0.103
49	〃	6.38	17.95	32.43	50	6.03	17.96	32.45	25.56	244	0.153
69	24	-0.72	18.18	32.85	75	-0.76	18.20	32.88	26.45	159	0.203
98	〃	-0.86	18.27	33.01	100	-0.88	18.27	33.01	26.56	149	0.242
137	〃	-1.00	18.33	33.12	150	-0.97	18.36	33.17	26.70	135	0.312
197	16	0.06	18.41	33.26	200	0.21	18.42	33.28	26.72	134	0.379
281	23	0.94	18.49	33.40	300	0.96	18.50	33.42	26.80	126	0.509
389	〃	0.93	18.54	33.50	400	1.05	18.53	33.48	26.83	123	0.634
482	〃	1.14	18.54	33.50	500	1.18	18.55	33.53	26.86	120	0.756

Staiton Ho 15 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0837–0935	20	8	1958	47°08′N	149°22′E	09	24	02	110	×	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		12.2	17.87	32.29	0	12.2	17.87	32.29	24.47	348	0
8	32	12.08	17.87	32.29	10	11.95	17.89	32.32	24.55	340	0.035
17	〃	9.22	17.95	32.43	20	10.00	18.00	32.52	25.04	293	0.067
25	〃	8.44	18.07	32.65	30	5.50	18.16	32.81	25.90	211	0.092
42	〃	1.91	18.22	32.92	50	1.35	18.27	33.01	26.45	159	0.129
57	40	0.90	18.31	32.08	75	1.40	18.34	33.13	26.54	151	0.168
77	〃	1.40	18.36	33.17	100	1.30	18.40	33.24	26.64	141	0.204
115	〃	1.06	18.42	22.28	150	1.20	18.44	33.31	26.70	135	0.272
161	〃	1.22	18.42	33.28	200	1.09	18.47	33.37	26.76	130	0.339
200	60	1.09	18.47	33.37	300	1.29	18.51	33.44	26.80	126	0.467
292	〃	1.29	18.51	33.44	400	1.38	18.55	33.51	26.84	122	0.591
380	〃	1.36	18.54	33.50							

Table 3. (Continued)

Station Ho 16 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
0105-0142	21	8	1958	46°27′N	146°15′E	09	19	02	130	×	×	4	12

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		14.0	17.93	32.39	0	14.0	17.93	32.39	24.20	373	0
9	22	13.31	17.85	32.25	10	13.36	17.86	32.27	24.22	371	0.037
19	〃	13.81	18.00	32.52	20	13.61	18.02	32.56	24.40	354	0.074
28	〃	11.88	18.23	32.94	30	10.70	18.24	32.95	25.25	273	0.105
46	〃	1.68	18.31	33.08	50	1.82	18.32	33.10	26.49	155	0.146
71	19	2.19	18.37	33.19	75	2.14	18.37	33.19	26.53	152	0.184
95	〃	1.44	18.38	33.21	100	1.28	18.38	33.21	26.61	144	0.223
142	〃	−0.12	18.38	33.21	150	−0.05	18.45	33.33	26.79	127	0.289
188	〃	1.87	18.51	33.44	200	1.87	18.52	33.46	26.78	128	0.353
262	37	1.64	18.58	33.57	300	1.51	18.58	33.57	26.88	118	0.477
3	〃	1.26	18.58	33.57	400	1.30	18.59	33.59	26.90	117	0.596
447	〃	1.24	18.60	33.60							

Station Ho 17 (4th)

Time (G.M.T.)	Day	Month	Year	Latitude	Longitude	dd	ff	ww	TTT	Sea	Swell	C	Tr
1430-1525	21	8	1958	45°00′N	144°29′E	29	14	02	150	×	×	×	×

Observed					Interpolated				Computed		
Depth (m)	Angle (°)	T (°C)	Cl (‰)	S (‰)	Depth (m)	T (°C)	Cl (‰)	S (‰)	σ_t	$10^5\triangle$st	$\triangle$D
0		15.3	17.66	31.91	0	15.3	17.66	31.91	23.53	437	0
10	11	15.32	17.68	31.94	10	15.32	17.68	31.94	23.67	424	0.043
20	〃	5.80	18.24	32.95	20	5.80	18.24	32.95	26.00	202	0.075
29	〃	1.97	18.30	33.06	30	2.00	18.31	33.08	26.46	158	0.093
49	〃	2.66	18.38	33.21	50	2.54	18.38	33.21	26.52	153	0.124
74	11	−0.47	18.36	33.17	75	−0.45	18.38	33.21	26.70	135	0.160
98	〃	−0.06	18.38	33.21	100	−0.05	18.38	33.21	26.69	136	0.194
147	〃	0.39	18.46	33.35	150	0.54	18.46	33.35	26.77	129	0.261
192	14	1.27	18.51	33.44	200	1.32	18.52	33.46	26.80	126	0.325
296	〃	1.48	18.57	33.55	300	1.37	18.57	33.55	26.87	119	0.448
388	〃	0.84	18.57	33.55	400	0.86	18.60	33.60	26.94	113	0.565
487	19	1.08	18.63	33.66							

9. Data on Wet Displacement Volume and Wet Weight of Plankton Samples collected with NORPAC Standard Net

(北太平洋標準ネット採集によるプランクトン湿排水量及び湿重量記録)

Vertical hauls were carried out with a North Pacific Standard Net, 45 cm × 180 cm, conical, made of bolting silk GG 54, having approximately 0.33 mm mesh aperture, from about 150 meters depth (by length of wire run out) once at each hydrographic stations.

A flow-meter was mounted at the center of the mouth ring of the net to register the amount of water filtered.

Unusual large organisms such as jellyfish were removed from the samples before they were submitted to the volume measurement, and number of these organisms was counted separately.

Wet displacement volume of the samples was measured by means of aspiration filtering apparatus, and wet weight was measured by weighing the samples retained on the filter paper of this apparatus.

The data presented are the values in 1000 m^3 of water, except the number of large organisms which were removed before volume measurement was made.

The above measurement and calculation were made at the Plankton Laboratory of the University.

Table 4 (1). Plankton volume data (45cm×180cm, GG 54, NORPAC

No. of collection	Corresponding hydrographic station	Position	Ship's date (1958)	Ship's time	Length of wire run out (m)	Revolutions of flowmeter	Volume of water filtered (m^3)
1	Ho 1 (1st)	42-00N 144-00E	May 14	0615	150	1332	32.0
2	Ho 2 (1st)	42-00N 146-00E	14	1830	150	1219	29.3
3	Ho 3 (1st)	42-00N 148-18E	15	0630	150	1648	39.6
4	Ho 4 (1st)	42-00N 150-00E	15	1530	150	1997	47.9
5	Ho 5 (1st)	42-00N 152-00E	16	1430	150	1275	30.6
6	Ho 6 (1st)	41-32N 154-00E	17	1500	150	1620	38.9
7	Ho 7 (1st)	41-50N 156-00E	18	0250	150	1200	28.8
8	Ho 8 (1st)	42-17N 158-00E	18	1400	150	1364	32.7
9	Ho 9 (1st)	43-30N 158-00E	19	0715	150		
10	Ho 10 (1st)	45-00N 158-00E	19	1900	150	1096	29.3
11	Ho 11 (1st)	44-33N 156-10E	20	0620	150	769	20.5
12	Ho 12 (1st)	44-03N 154-18E	20	1940	150	888	23.7
13	Ho 13 (1st)	43-30N 152-30E	21	0600	150	929	24.8
14	Ho 14 (1st)	45-20N 152-53E	21	1810	150	924	24.7
15	Ho 15 (1st)	44-39N 150-17E	22	0420	150	830	22.2
16	Ho 16 (1st)	43-33N 149-23E	22	1500	150	927	24.8
11	Ho 17 (1st)	43-01N 145-13E	23	1000	150	1197	32.0
18	Ho 18 (1st)	42-30N 144-56E	24	0630	150		

standard net) in 1958 cruise 4 (1) to the east of Hokkaido

Displacement volume per 1000 m^3 of water (cc)	Wet weight per 1000 m^3 of water (gr)	Number of large organisms removed before measurement (in a haul) Jellyfish	Remarks
313	188	10	
751	693	27	Comparatively abundant diatoms and *Calanus plumchrus*
278	253	22	
292	219		Comparatively abundant diatoms
392	271	1	
411	368	2	Comparatively abundant small-sized copepods
729	684	87	Abundant *Calanus plumchrus*
306	251	3	Comparatively abundant *Calanus plumchrus*
(840)	(681)	2	Abundant *Calanus plumchrus*
205	130	23	
341	210	12	
422	304	16	
323	286	21	
486	231	18	Comparatively abundant *Calanus cristatus*
450	374	18	Comparatively abundant diatoms and *Sagitta elegans*
444	431	38	〃
563	422	34	Comparatively abundant diatoms and *Eucalanus bungii*
(252)	(210)	18	Comparatively abundant diatoms

Table 4 (2). Plankton volume data (45cm × 180cm, GG 54, NORPAC standard

No. of collection	Corresponding hydrographic station	Position	Ship's date (1958)	Ship's time	Length of wire run out (m)	Revolutions of flowmeter	Volume of water filtered (m^3)
1	Ho 1 (2nd)	47-30N 155-00E	June 10	2000	150	918	24.5
2	Ho 2 (2nd)	47-30N 157-00E	11	0830	150	986	25.8
3	Ho 3 (2nd)	47-28N 159-00E	11	1740	150	766	20.5
4	Ho 4 (2nd)	47-30N 161-00E	12	0355	150	985	26.3
5	Ho 5 (2nd)	47-34N 163-00E	12	1300	150		
6	Ho 6 (2nd)	47-33N 165-00E	13	0840	150	590	15.8
7	Ho 7 (2nd)	48-47N 166-34E	13	2105	150	710	19.0
8	Ho 8 (2nd)	50-04N 168-00E	14	0800	150	758	20.2
9	Ho 9 (2nd)	51-18N 169-56E	14	1700	150	730	19.5
10	Ho 10 (2nd)	52-30N 171-36E	15	0630	150	725	19.4
11	Ho 11 (2nd)	53-50N 175-19E	16	0840	150		
12	Ho 12 (2nd)	54-24N 172-22E	16	2045	150	818	21.8
13	Ho 13 (2nd)	55-01N 169-38E	17	0900	150	784	20.9
14	Ho 16 (2nd)	55-07N 163-30E	18	1800	150		
15	Ho 17 (2nd)	54-02N 162-30E	19	0240	150	780	20.8
16	Ho 18 (2nd)	53-21N 164-03E	19	1110	150	772	20.6
17	Ho 19 (2nd)	52-28N 165-40E	20	0515	150	430	11.5
18	Ho 20 (2nd)	51-52N 167-24E	20	1450	150	751	20.1
19	Ho 21 (2nd)	50-56N 166-15E	21	0000	150		
20	Ho 22 (2nd)	50-00N 165-00E	21	0900	150	710	19.0
21	Ho 28 (2nd)	48-40N 156-07E	24	0900	150		
22	Ho 29 (2nd)	47-30N 156-00E	25	0515	150	670	17.9
23	Ho 30 (2nd)	46-30N 153-33E	25	1600	150	810	21.6

net) in 1958 cruise 4 (2) to the western North Pacific and Bering Sea

Displacement volume per 1000 m^3 of water (cc)	Wet weight per 1000 m^3 of water (gr)	Number of large organisms removed before measurement (in a haul) Jellyfish	Remarks
408	278	8	Comparatively abundant *Calanus cristatus*
271	174	12	
537	415	22	Abundant *Calanus plumchrus*
913	665	5	Abundant *Calanus cristatus*
(210)	(147)		
633	348	12	
421	230	14	Comparatively abundant *Calanus cristatus*
594	396	18	〃
410	233	10	〃
410	216	7	Comparatively abundant *Calanus plumchrus*
(210)	(189)	2	Comparatively abundant small-sized copepods
826	573	4	Exclusively abundant *Calanus plumchrus*
526	440	4	Comparatively abundant *Calanus plumchrus* and small-sized copepods
(294)	(269)	20	
529	442	25	Comparatively abundant *Calanus cristatus* and *C. plumchrus*
267	170	11	Exclusively abundant diatoms
739	478	13	Abundant *Calanus cristatus*
149	746	4	
(210)	(46)	3	
737	589	12	Abundant diatoms and less abundant *Calanus cristatus*
(420)	(231)	12	Comparatively abundant *Calanus cristatus* and small-sized copepods
559	447	6	Abundant *Calanus cristatus*
1111	889		Abundant *Calanus plumchrus* and less abundant *Calanus cristatus*

Table 4 (3). Plankton volume data (45cm × 180cm, GG 54, NORPAC

No. of collection	Corresponding hydrographic station	Position	Ship's date (1958)	Ship's time	Length of wire run out (m)	Revolutions of flowmeter	Volume of water filtered (m^3)
1	Ho 1 (3rd)	46-00N 144-00E	July 9	1900	150		
2	Ho 2 (3rd)	48-00N 146-00E	10	1225	150		
3	Ho 3 (3rd)	49-30N 145-30E	10	2315	150	1163	33.1
4	Ho 4 (3rd)	49-30N 147-20E	11	0900	150	1200	32.0
5	Ho 5 (3rd)	50-30N 149-00E	11	1934	150	987	26.4
6	Ho 6 (3rd)	51-40N 147-00E	12	0604	150	900	24.0
7	Ho 8 (3rd)	53-30N 145-00E	13	0000	150	604	16.1
8	Ho 10 (3rd)	55-00N 148-00E	13	1900	150		
9	Ho 11 (3rd)	55-00N 146-00E	14	0347	150	730	19.5
10	Ho 12 (3rd)	55-10N 144-10E	14	1100	150	810	21.6
11	Ho 13 (3rd)	56-00N 145-17E	14	2020	150	850	22.7
12	Ho 14 (3rd)	55-49N 147-06E	15	1040	150	893	23.8
13	Ho 15 (3rd)	56-00N 149-00E	15	1900	150	900	24.0
14	Ho 16 (3rd)	57-00N 151-00E	16	1440	150	817	21.8
15	Ho 17 (3rd)	57-30N 153-00E	16	2235	150	1040	27.8
16	Ho 18 (3rd)	56-30N 154-30E	17	0810	150	1078	28.8
17	Ho 20 (3rd)	55-00N 151-00E	18	1150	150	990	26.4
18	Ho 21 (3rd)	54-00N 153-00E	18	2230	150	719	19.2
19	Ho 22 (3rd)	52-30N 155-00E	19	1200	150	1104	29.5
20	Ho 23 (3rd)	52-30N 153-00E	20	1530	150	1030	27.5

standard net) in 1958 cruise 4 (3) to the western-north of Kurile Chain

Displacement volume per 1000 m^3 of water (cc)	Wet weight per 1000 m^3 of water (gr)	Number of large organisms removed before measurement (in a haul) Jellyfish	others	Remarks
(693)	(525)	1		Less abundant diatoms and abundant *Calanus plumchrus*
(252)	(134)	7		Abundant diatoms
2356	2311			Exclusively abundant *Metridia lucens*
156	281	5		Exclusively abundant diatoms
644	493	2		〃
604	613			〃
932	658			Abundant *Calanus plumchrus*
(672)	(609)	15		Exclusively abundant *Calanus plumchrus*
615	523	5		Less abundant diatoms and abundant *Calanus plumchrus*
233	204			Abundant diatoms and less abundant *Calanus plumchrus*
3084	423	1		Exclusively abundant diatoms
210	122	2		〃
167	125			〃
183	101	4		Abundant diatoms
324	230	2		Less abundant diatoms and abundant *Calanus plumchrus*
417	365		1	Exclusively abundant *Metridia lucens*
152	117			Exclusively abundant diatoms
365	260	14		
254	214			Exclusively abundant *Metridia lucens*
415	225			Comparatively abundant *Calanus plumchrus* and *C. plumchrus*

Table 4 (3).

No. of collection	Corresponding hydrographic station	Position	Ship's date (1958)	Ship's time	Length of wire run out (m)	Revolutions of flow-meter	Volume of water filtered (m^3)
21	Ho 24 (3rd)	52-20N 151-00E	21	0200	150	885	23.6
22	Ho 26 (3rd)	51-00N 153-00E	22	1515	150	818	21.8
23	Ho 27 (3rd)	51-00N 155-00E	23	0910	150	786	21.0
24	Ho 28 (3rd)	50-00N 154-00E	23	1800	150	475	12.7
25	Ho 30 (3rd)	48-22N 148-30E	25	1200	150	875	23.4
26	Ho 31 (3rd)	47 00N 149-00E	26	0005	150	936	25.0
27	Ho 32 (3rd)	45-53N 148-04E	27	1005	150	766	20.5
28	Ho 33 (3rd)	46-00N 146-00E	27	1930	150	772	20.6

(Continued)

Displacement volume per 1000 m^3 of water (cc)	Wet weight per 1000 m^3 of water (gr)	Number of large organisms removed bofore measurement (in a haul) Jellyfish	Remarks
551	453	2	Exclusively abundant *Calanus plumchrus*
229	133		
547	429		Exclusively abundant *Calanus plumchrus*
47.2	386	3	Abundant diatoms and less abundant *Calanus plumchrus*
179	132	7	
560	492	3	Abundant *Calanus plumchrus*
317	322		〃
485	408		〃

Table 4 (4). Plankton volume data (48cm × 180cm, GG 54,

No. of collection	Corresponding hydrographic station	Position	Ship's date (1958)	Ship's time	Length of wire run out (m)	Revolutions of flowmeter	Volume of water filtered (m^3)
1	Ho 1 (4th)	42-33N 145-00E	Aug. 7	1250	150	795	21.3
2	Ho 2 (4th)	43-10N 146-30E	7	2307	150	855	22.9
3	Ho 3 (4th)	43-45N 148-00E	8	0915	150	917	24.5
4	Ho 4 (4th)	44-30N 150-00E	8	2126	150	485	13.0
5	Ho 5 (4th)	45-38N 151-20E	9	1305	150	926	24.8
6	Ho 6 (4th)	47-14N 153-15E	10	0448	150	1220	32.6
7	Ho 7 (4th)	48-27N 154-47E	10	1630	150		
8	Ho 8 (4th)	49-31N 155-42E	11	0020	150		
9	Ho 10 (4th)	51-11N 154-26E	11	1920	150	384	10.3
10	Ho 11 (4th)	51-59N 155-40E	15	1155	150	970	25.9
11	Ho 12 (4th)	50-35N 154-45E	17	1810	150	620	16.6
12	Ho 13 (4th)	49-20N 152-45E	19	2020	150	822	22.0
13	Ho 14 (4th)	48-21N 151-13E	20	0630	150	1053	28.2

NORPAC standard net) in 1958 cruise 4 (4) to the Okhotsk Sea

Displacement volume per 1000 m^3 of water (cc)	Wet weight per 1000 m^3 of water (gr)	Number of large organisms removed before measurement (in a haul)			Remarks
		Jellyfish	Squid	Others	
446	338	23	1		
537	502	14			Abundant diatoms and less abundant *Calanus cristatus* and euphausiids
449	367	20			Abundant *Calanus plumchrus*
692	669	13			
383	323	8			Exclusively abundant diatoms and less abundant *Calanus cristatus*
368	267	20	1		Comparatively abundant diatoms and *Eucalanus bungii*
(378)	(399)	1	1		Exclusively abundant diatoms and *Eucalanus bungii*
(525)	(408)	4		2	Exclusively abundant diatoms and less abundant *Calanus cristatus*
583	408				Comparatively abundant *Calanns plumchrus*
212	147				Abundant young *Metridia*
422	331				Comparatively abundant *Sagitta elegans*, *Calanus cristatus* and young *Metridia*
455	295	8			Abundant *Calanus plumchrus*
355	312	5			〃

10. Data on Wet Displacement Volume and Wet Weight of Plankton Samples collected with Fish-Larva Net

(稚魚ネット採集によるプランクトン湿排水量及び湿重量記録)

A fish-larva net, 130 cm × 450 cm, made of stramin in the anterior 300 cm, and of bolting silk GG 54 in the posterior 150 cm, was towed through approximately the surface water layer at a speed of about 2 knots for 10 minutes. The net was not equipped with flow-meter, so that the data are not available for quantitative studies; here only the relative abundance of catches can be discussed.

Large organisms such as jellyfish and squid larvae were removed from the samples before they were submitted to the measurement of volume and weight; the number of such removed organisms was counted.

Fish larvae contained in the samples were also removed before the measurement. The data on fish larvae are given on pp. 266-278.

Wet displacement of samples was measured with an aspiration filtering apparatus, and then the materials left on the filtering disc of the apparatus were weighed.

The above processing was carried out at the Plankton Laboratory of the University.

Table 5 (1). Plankton volume data (fish-larva net)

* No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Displacement volume of total samples in a tow (cc)	Wet weight of total samples in a tow (gr)
1	Ho 1 (1st)	42-00N 144-00E	May 14	0900	26.4	12.0
2	Ho 2 (1st)	42-00N 146-00E	14	1935	120.0	95.2
3	Ho 3 (1st)	42-00N 148-18E	15	0745	64.0	20.0
4	Ho 4 (1st)	42-00N 150-00E	15	1730	35.2	27.2
5	Ho 5 (1st)	42-00N 152-00E	16	1540	48.0	26.4
7	Ho 9 (1st)	43-30N 158-00E	19	0100	120.0	80.0
8	Ho 10 (1st)	45-00N 158-00E	19	1900	32.0	16.0
9	Ho 11 (1st)	44-33N 156-10E	20	0800	4.5	2.5
10	Ho 12 (1st)	44-03N 154-18E	20	1910	12.0	5.6
11	Ho 13 (1st)	43-30N 152-30E	21	0700	32.0	18.2
12	Ho 14 (1st)	45-00N 151-53E	21	1835	88.0	68.0
13	Ho 15 (1st)	44-39N 150-17E	22	0530	36.0	14.0
14	Ho 16 (1st)	43-33N 147-23E	22	1605	7.0	4.7
15		43-01N 148-52E	22	1920	36.0	24.0
15′		43-10N 145-13E	23	0415	12.0	4.0
16	Ho 18 (1st)	42-30N 144-56E	24	0630	16.0	9.6

* Refer to Fig. 2 on p. 266.

in 1958 cruise 4 (1) to the east of Hokkaido

Number of large organisms removed before measurement (in a haul)		Remarks
Jellyfish	Squid	
		Abundant diatoms and comparatively abundant *Calanus plumchrus*
		Abundant *Calanus plumchrus*
		Exclusively abundant diatoms
		〃
		〃
	8	Abundant *Calanus plumchrus*
32		〃
		Comparatively abundant *Sagitta* and *Themisto*
8		
40		Exclusively abunbant diatoms
		Exclusively abundant *Themisto*
8		Exclusively abundant *Calanus cristatus*
		Exclusively abundant diatoms
72		Abundant diatoms
		Comparatively abundant diatoms
24		Exclusively abundant diatoms

Table 5 (2). Plankton volume data (fish-larva net) in 1958

* No. of collection	Corresponding hydrographic station	Position	Ship's date (1958)	Ship's time	Displacement volume of total samples in a tow (cc)	Wet weight of total samples in a tow (gr)
17	Ho 2 (2nd)	47-30N 157-00E	June 11	0930	16.0	6.4
18	Ho 3 (2nd)	47-28N 159-00E	11	1850	136.0	102.4
19′		47-34N 163-46E	12	1740	480.0	433.6
21	Ho 6 (2nd)	47-33N 165-00E	13	0930	48.0	30.4
22		48-30N 166-12E	13	1840	120.0	116.0
23	Ho 7 (2nd)	48-47N 166-34E	13	2210	192.0	176.0
24	Ho 8 (2nd)	50-04N 168-00E	14	0910	68.0	160.0
25	Ho 9 (2nd)	51-18N 169-56E	14	2020	104.0	84.0
26	Ho 10 (2nd)	52-30N 171-34E	15	0710	17.0	13.0
27	Ho 11 (2nd)	53-50N 175-19E	16	0935	35.2	29.6
28		54-16N 172-02E	16	1800	203.2	304.0
29	Ho 12 (2nd)	54-24N 172-22E	16	2145	136.0	120.0
30	Ho 13 (2nd)	55-01N 169-38E	17	1000	8.0	7.0
31	Ho 14 (2nd)	55-35N 167-00E	17	2210	120.0	76.8
32	Ho 15 (2nd)	56-09N 164-14E	18	1100	18.4	13.6
33	Ho 16 (2nd)	55-07N 163-30E	18	1900	96.0	78.4
34	Ho 17 (2nd)	54-02N 162-30E	19	0345	200.0	157.6
35	Ho 18 (2nd)	53-21N 164-03E	19	1200	12.0	8.0
37	Ho 19 (2nd)	52-28N 165-40E	20	0610	96.0	75.2
38		51-41N 167-15E	20	1900	144.0	114.4
39	Ho 21 (2nd)	50-56N 166-15E	21	0100	104.0	72.8
40	Ho 22 (2nd)	50-00N 165-00E	21	1000	4.5	2.7
41	Ho 23 (2nd)	50-40N 163-05E	21	1815	424.0	409.6
42	Ho 28 (2nd)	48-40N 156-07E	24	1005	92.0	66.4
43	Ho 29 (2nd)	47-30N 155-00E	25	0645	216.0	192.8
26	Ho 30 (2nd)	46-30N 153-33E	25	1650	56.0	52.0

* Refer to Fig. 3 on p. 268.

cruise 4 (2) to the western North Pacific and Bering Sea

Number of large organisms removed before measurement (in a haul)		Remarks
Jellyfish	Squid	
16		Comparatively abundant diatoms
		Abundant *Calanus plumchrus* and less abundant *Sagitta*
		Exclusively abundant *Calanus plumchrus*
		Comparatively abundant *Sagitta* and diatoms
		Exclusively abundant *Calanus plumchrus*
16		Exclusively abunbant *Calanus cristatus*
		Abundant *Calanus cristatus*
512	16	Exclusively *Calanus plumchrus* and less abundant jellyfishes
		Comparatively abundant *Calanus plumchrus*
16		Exclusively abundant small-sized copepods
552	8	Exclusively abundant *Themisto*
336		Exclusively abundant *Calanus plumchrus*
2		Comparatively abundant small-sized copepods
		Exclusively abundant *Calanus plumchrus*
16		
80		Abundant *Themisto*
		Exclusively abundant *Calanus plumchrus*
		Exclusively abundant diatoms
		Abundant *Calanus plumchrus* and less abundant *Sagitta elegans*
8		Exclurively abundant *Themisto*
	8	
	1	Exclusively abundant *Themisto*
		Exclusively abundant *Calanus plumchrus*
32		〃
		〃
		〃

Table 5 (3). Plankton volume data (fish-larva net) in 1958

* No. of collection	Corresponding hydrographic station	Position	Ship's date (1958)	Ship's time	Displacement volume of total samples in a tow (cc)	Wet weight of total samples in a tow (gr)
45	Ho 1 (3rd)	46-00N 144-00E	July 9	2000	48.0	16.8
46		48-50N 145-01E	10	2022	64.0	72.8
47	Ho 3 (3rd)	49-30N 145-30E	11	0025	792.0	738.0
48	Ho 4 (3rd)	49-30N 147-20E	11	1010	40.0	31.2
49	Ho 5 (3rd)	50-30N 149-00E	11	2040	190.0	98.8
50	Ho 6 (3rd)	51-40N 147-07E	12	0710	92.0	91.2
51	Ho 7 (3rd)	52-45N 145-00E	12	1920	112.0	103.2
52		53-10N 145-00E	12	2040	304.0	300.0
53	Ho 8 (3rd)	53-30N 145-00E	13	0045	160.0	147.2
54	Ho 9 (3rd)	54-00N 147-00E	13	1130	56.0	25.6
55	Ho 10 (3rd)	55-00N 148-00E	13	2010	188.0	176.0
56	Ho 11 (3rd)	55-00N 146-00E	14	0424	24.0	12.0
57	Ho 12 (3rd)	55-10N 144-10E	14	1225	4.0	0.9
58	Ho 13 (3rd)	56-00N 145-17E	14	2055	26.0	19.2
59	Ho 14 (3rd)	55-49N 147-06E	15	1250	7.2	0.2
60	Ho 15 (3rd)	56-00N 149-00E	15	1935	76.0	80.0
61		56-00N 149-00E	15	2040	152.0	140.4
62	Ho 16 (3rd)	57-00N 151-00E	16	1330	12.0	6.4
63		57-00N 152-00E	16	2040	600.0	564.0
64	Ho 17 (3rd)	57-30N 153-00E	16	1125	144.0	132.0

*Refer to Fig. 4 on p. 272

cruise 4 (3) to the western-north of Kurile Chain

Number of large organisms removed before measurement (in a haul)		Remarks
Jellyfish	Squid	
		Comparatively abundant small-sized copepods
16		Abundant *Sagitta* and *Themisto*
		Exclusively abundant *Metridia lucens*
	40	Exclusively abundant diatoms
	48	Abundant diatoms and less abundant *Themisto*
		Exclusively abundant diatoms
32	24	Exclusively abundant *Themisto*
		〃
	32	〃
		Exclusively abundant diatoms
		Exclusively abundant *Themisto*
		Exclusively abundant diatoms
		〃
		〃
8		
		Exclusively abundant *Themisto*
512	168	〃
	112	〃
	16	〃
		〃

Table 5 (3).

No. of collection	Corresponding hydrographic station	Position	Ship's date (1958)	Ship's time	Displacement volume of total samples in a tow (cc)	Wet weight of total samples in a tow (gr)
65	Ho 18 (3rd)	56-30N 154-30E	17	0955	1.0	0.3
66	Ho 19 (3rd)	55-30N 153-00E	17	1725	16.0	16.8
67		54-10N 152-00E	17	1925	208.0	196.0
68	Ho 20 (3rd)	55-00N 151-00E	18	1235	40.0	32.8
69		54-00N 152-00E	18	2020	400.0	363.2
70	Ho 21 (3rd)	54-00N 153-00E	18	2330	192.0	172.0
71	Ho 22 (3rd)	52-30N 155-00E	19	1230	3.5	2.9
72		52-30N 154-00E	19	1950	120.0	106.0
73	Ho 23 (3rd)	52-30N 153-00E	20	1640	80.0	82.4
74	Ho 24 (3rd)	52-20N 151-00E	21	0315	328.0	312.0
75	Ho 25 (3rd)	51-00N 151-00E	21	1430	152.0	169.6
76	Ho 26 (3rd)	51-00N 153-00E	22	1625	112.0	88.0
77		51-00N 153-22E	22	2005	128.0	124.0
78	Ho 27 (3rd)	51-00N 155-00E	23	1025	24.0	18.4
79	Ho 28 (3rd)	50-00N 154-00E	23	1940	304.0	296.8
80	Ho 30 (3rd)	48-22N 148-30E	24	1430	100.0	85.6
81		47-50N 149-40E	25	2025	184.0	172.8
82	Ho 31 (3rd)	47-00N 149-00E	26	0210	72.0	60.8
83	Ho 32 (3rd)	45-53N 148-04E	26	1115	12.0	5.6
84	Ho 33 (3rd)	46-00N 146-00E	26	2115	96.0	95.2

(Continued)

Number of large organisms removed before measurement (in a haul)		Remarks
Jellyfish	Squid	
		Comparatively abundant diatoms, *Themisto* and *Calanus plumchrus*
40	56	Abundant *Calanus plumchrus* and less abundant *Sagitta elegans*
		Exclusively abundant *Themisto*
	304	〃
	32	Exclusively abundant *Sagitta*
		Comparatively abundant *Sagitta*
	8	Comparatively abundant *Themisto*
		Exclusively abundant *Themisto*
		〃
		〃
		Exclusively abundant *Calanus plumchrus*
		Exclusively abundant *Themisto*
		Abundant *Themisto* and less abundant diatoms
152	16	Abundant *Themisto* and *Sagitta*
		Exclusively abundant *Themisto*
	8	Abundant *Sagitta* and small-sized copepods
8		〃
		Exclusively abundant diatoms
16		Exclusively abundant small-sized copepods

Table 5 (4). Plankton volume data (fish-larva net)

* No. of collection	Corresponding hydrographic station	Position	Ship's date (1958)	Ship's time	Displacement volume of total samples in a two (cc)	Wet weight of total samples in a tow (gr)
85	Ho 1 (4th)	42-30N 145-00E	Aug. 7	1337	2.0	0.6
86		42-56N 146-07E	7	1936	760.0	760.0
87	Ho 2 (4th)	43-10N 146-05E	7	2328	128.0	128.0
88	Ho 3 (4th)	43-45N 148-00E	8	0924	24.0	21.6
89	Ho 4 (4th)	44-30N 150-00E	8	2144	84.0	66.4
90	Ho 5 (4th)	45-40N 151-20E	9	1400	28.0	15.2
91		46-15N 152-05E	9	1910	140.0	120.0
92	Ho 6 (4th)	47-14N 153-15E	10	0452	12.0	5.6
93	Ho 7 (4th)	48-28N 154-46E	10	1631	16.0	8.0
94		48-55N 155-18E	10	1908	100.0	44.8
95	Ho 8 (4th)	49-31N 155-42E	11	0026	60.0	44.0
96	Ho 10 (4th)	50-16N 154-22E	11	0935	24.0	15.2
97		51-11N 154-26E	11		48.0	28.8
98		51-22N 155-14E	12	1917	216.0	201.6
99		52-00N 155-44E	15	1209	44.0	24.0
100		50-36N 154-36E	16	1805	208.0	185.6
101		50-42N 154-45E	17	1909	80.0	72.0
102		50-38N 154-56E	18	1855	156.0	140.8
103	Ho 11 (4th)	51-59N 155-40E	19	2031	132.0	99.2
104	Ho 12 (4th)	50-35N 154-45E	20	0651	44.0	35.2
21	Ho 13 (4th)	49-20N 152-45E	20	1836	152.0	144.0

* Refer to Fig. 5 on p. 276.

in 1958 cruise 4 (4) to Okhotsk Sea

Number of large organisms removed before measurement (in a haul)		Remarks
Jellyfish	Squid	
		Abundant euphausiids and *Themisto*
8		Abundant euphausiids and *Sagitta*
32		Comparatively abundant *Sagitta*, *Themisto* and euphausiids
16		Abundant diatoms, less abundant *Themisto* and euphausiids
24	16	Abundant *Themisto* and less abundant euphausiids
		Abundant diatoms and less abundant euphausiids
		Exclusively abundant diatoms
8	8	Abundant diatoms and *Calanus cristatus*
8		〃 〃
56		Abundant diatoms
80		Comparatively abundant *Sagitta* and *Themisto*
	80	Exclusively abundan *Themisto*
		Comparatively abundant megalopa
		Abandant *Sagitta* and *Themisto*
8		〃 〃
	24	Exclusively abundant *Themisto*
		Exclusively abundant small-sized copepods
	24	
	16	Exclusively abundant *Themisto*

11. Data on Wet Displacement Volume of Plankton Samples collected with Fine Mesh Net

(細目ネット採集によるプランクトン湿排水量及び湿重量記録)

Vertical hauls with a fine mesh net, 30 cm × 150 cm, conical, made of bolting silk ××13, having approximately 0.11 mm mesh aperture, were carried out, from about 100 meter depth to the surface (by length of wire run out) once at each hydrographic station.

A current-meter (flow-meter) was mounted at the center of the mouth ring of the net to register the volume of water filterd.

Wet displacement volume of the samples was measured by means of aspiration filtering apparatus.

Wet displacement volume of the samples is represented in cc/1000m^3 and the number of dominant species is given in individuals/m^3, colonies/m^3, or simply by mentioning abundant, very common, common, or occasional, in case the current-meter had not operated.

The above processing was carried out at Hokkaido Regional Fisheries Research Laboratory in Yoichi.

Table 6 (1). Plankton volume data (30cm × 150cm, XX13 net)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Wire run out (m)	Wire angle	Revolutions of flow meter
1	Ho 1 (1st)	42-00N 144-00E	1958 May 14	0845	100	14	729
2	Ho 2 (1st)	42-00N 146-00E	14	1945	〃	45	650
3	Ho 3 (1st)	42-00N 148-18E	15	0707	〃	29	625
4	Ho 4 (1st)	42-00N 150-00E	15	1620	〃	9	605
5	Ho 5 (1st)	42-00N 152-00E	16	1540	〃	35	695
6	Ho 6 (1st)	41-32N 154-00E	17	1545	〃	30	635
7	Ho 7 (1st)	41-50N 156-00E	18	0550	〃	18	580
8	Ho 8 (1st)	42-17N 158-00E	18	1440	〃	5	407
9	Ho 9 (1st)	43-30N 158-00E	19	0850	〃	35	564
10	Ho 10 (1st)	45-00N 158-00E	19	2000	〃	30	564
11	Ho 11 (1st)	44-33N 156-10E	20	0700	〃	38	541
12	Ho 12 (1st)	44-03N 154-18E	20	2022	〃	8	307
13	Ho 13 (1st)	43-30N 152-30E	21	0637	〃	18	503
14	Ho 14 (1st)	45-20N 152-53E	21	1850	〃	8	390
15	Ho 15 (1st)	44-39N 150-17E	22	0455	〃	2	220 ?
16	Ho 16 (1st)	43-33N 149-23E	22	1535	〃	20	479
17	Ho 17 (1st)	43-01N 145-13E	23	1110	〃	40	760
18	Ho 18 (1st)	42-30N 144-56E	24	0730	〃	14	329

in 1958 cruis 4 (1) to the east of Hokkaido

Volume of water filtered (m^3)	Displacement volume per $1000m^3$ (cc)	Dominant species (Individuals or colonies/m^3)
3.7	548	*Thal'ra Nordenskiöldi* (139406), *Fragilaria* sp. (124800), *Ch. debilis* (45400) Others (118333).
3.3	920	*Thal'ra Nordenskiöldi* (660700), *Fragilaria* sp. (72700), *Ch. atlanticus* (42400) Others (84900).
3.1	799	*Ch. debilis* (66700), *Fragilaria* sp. (54000), Others (23000)
3.0	660	*Ch. debilis* (57300), *Corethron hystrix* (213300), *Ch. convolutus* (126700), *Ch. concavicornis* (96700), Others (86700)
3.5	862	Micro-copepod (15100), *Ch.concavicornis* (13700), *Corethron hystrix* (9980), Others (18000)
3.2	1418	*Coscinodiscus radiatus* (36500), Micro-copepod (25000), Others (9670)
2.9	2069	Micro-copepod (28600), *Cos. radiatus* (26500), Others (3100)
2.1	1324	Micro-copepod (22400), *Cos. radiatus* (13300), *Ceratium bucephalum* (3330), Others (4760)
3.7	938	Micro-copepod (3540), *Cos. radiatus* (9990), Others (8640)
2.8	177	Micro-copepod (1000), *Rh. hebetata* f. *s.* (714), Others (1790)
2.7	923	Micro-copepod (11500), *Corethron hystrix* (4440), *Ch. concavicornis* (2590), Others (3330)
1.5	974	*Thal'ra* sp. (60000), *Ch. curvisetus* (142200), Others (15600)
2.5	1587	*Thal'ra Nordenskiöldi* (45800), Micro-copepod (9040), Others (9310)
2.0	256	*Ch. atlanticus* (11000), Micro-copepod (6000), Others(16000)
1.1	1364	*Thal'ra Nordenskiöldi* (1149900), *Ch. debilis* (618100), *Thal'ra* sp. (368100), *Fragilaria* sp. (263600) Others (227300)
2.4	833	*Ch. pendulus*? (abundance), *Ch. atlanticus* (very common), *Ch. atlanticus* f. *audax* (very common), Others (common)
3.8	787	*Ch. debilis* (542100), *Thal'ra Nordenskiöldi* (194700), Others (284200)
1.7	1818	*Ch. diadema* (1529400), *Ch.debilis* (705900), *Ch.* sp. (794100), Others (217600)

Table 6 (2). Plankton volume data (30cm × 150cm, XX13 net) in 1958

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Wire run out (m)	Wire angle	Revolutions of flow-meter
1	Ho 1 (2nd)	47-30N 155-00E	1958 June 10	2300	100	18	339
2	Ho 2 (2nd)	47-30N 157-00E	11	0900	〃	12	390
3	Ho 3 (2nd)	47-28N 159-00E	11	1840	〃	16	387
4	Ho 4 (2nd)	47-30N 161-00E	12	0443	〃	18	380
5	Ho 5 (2nd)	47-34N 163-00E	12	1445	〃	23	416
6	Ho 6 (2nd)	47-33N 165-00E	13	0910	〃	14	396
7	Ho 7 (2nd)	48-47N 166-34E	13	2145	〃	10	360
8	Ho 8 (2nd)	50-04N 168-00E	14	0830	〃	26	420
9	Ho 9 (2nd)	51-18N 169-56E	14	1956	〃	12	384
10	Ho 10 (2nd)	52-30N 171-36E	15	0705	〃	8	370
11	Ho 11 (2nd)	53-50N 175-19E	16	0925	〃	0	250 ?
12	Ho 12 (2nd)	54-24N 172-22E	16	2115	〃	19	419
13	Ho 13 (2nd)	55-01N 169-38E	17	0925	〃	35	507
14		56-19N 164-14E	18	1022	〃	37	494
15	Ho 16 (2nd)	55-07N 163-30E	18	1850	〃	22	274
16	Ho 17 (2nd)	54-02N 162-30E	19	0324	〃	4	207
17	Ho 18 (2nd)	53-21N 164-03E	19	1146	〃	10	310
18	Ho 19 (2nd)	52-28N 165-40E	20	0533	〃	8	338
19	Ho 20 (2nd)	51-52N 167-24E	20	1523	〃	18	364
20	Ho 21 (2nd)	50-56N 166-15E	21	0033	〃	10	364
21	Ho 22 (2nd)	50-00N 165-00E	21	0935	〃	18	—
22		49-48N 157-12E	24	0930	〃	8	321
23		48-40N 156-07E	25	0645	〃	12	325
24		47-30N 155-00E	25	1629	〃	20	354

cruise 4 (2) to the western North Pacific and Bering Sea

Volume of water filtered (m^3)	Displacement volume per $1000m^3$ (cc)	Dominant species (Individuals or colonies/m^3)
1.7	1471	*Ch. debilis* (149900), Ch. *decipiens* (22100), *Ch. socialis* (16800), Others (100548)
2.0	1026	*Ch. concavicornis* (14500), Micro-copepod (8500), *Coscinodiscus radiatus* (4500), *Ch. decipiens* (3000), Others (7000)
2.0	1508	Micro-copepod (21000), *Ch. concavicornis* (18500), *Cos. radiatus* (5000), Others (26500)
1.9	4211	Micro-copepod (315600), *Ch. concavicornis* (215700), *Corethron hystrix* (7890), Others (17400)
2.1	242	*Ch. debilis* (117100), *Ch. concavicornis* (34000), *Ch. curvisetus* (17100), Others (31400)
2.0	1010	*Ch. concavicornis* (52000), Micro-copepod (24000), *Ch. convolutus* (8500), Others (6500)
1.8	1668	Micro-copepod (17200), *Ch. concavicornis* (11700), Others (5000)
2.1	2381	Micro-copepod (34800), *Corethron hystrix* (13800), *Ch. concavicornis* (4280), Others (10000)
1.9	260	*Corethron hystrix* (12600), Micro-copepod (5970), *Ch. atlanticus* (4600), Others (9830)
1.9	1081	*Corethron hystrix* (23100), Micro-copepod (1840), *Ch. atlanticus* (3680), Others (6840)
1.3	1600	Micro-copepod (35400), *Ch. atlanticus* (6150), *Corethron hystrix* (5380), Others (7690)
2.1	2381	Micro-copepod (69000), Others (9000)
2.5	1181	Micro-copepod (42800), *Ch. convolutus* (23200), *Ch. atlanticus* (12000) Others (30800)
2.5	2024	Micro-copepod (19600), *Ch. decipiens* (1600), Others (10400)
1.4	1095	*Ch. debilis* (62900), *Ch. convolutus* (8770), Others (21600)
1.0	2885	*Corethron hystrix* (39000), *Ch. convolutus* (31000), *Ch. decipiens* (15000), Others (72000)
1.6	1290	*Ch. convolutus* (184400), *Ch. concavicornis* (40600), Others (25000)
1.7	1183	*Ch. convolutus* (13500), *Cos. radiatus* (10600), *Ch. concavicornis* (9410), Micro-copepod (8230), Others (3530)
1.4	735	Micro-copepod (43600), *Cos. radiatus* (15000), *Ch. convolutus* (5710), *Ch. concavicornis* (5710), Others (5710)
1.8	275	Micro-copepod (27200), *Corethron hystrix* (9400), Others (5000)
—	—	*Ch. concavicornis* (abundant), *Ch. convolutus* (very common), Micro-copepod (common), Others (occasional)
1.6	621	Micro-copepod (30000), *Cos. radiatus* (11300), Others (20600)
1.6	2454	Micro copepod (28100), *Cos. radiatus* (5000), *Peridinium sp.* (5000), Others (6250)
1.8	1695	Micro-copepod (38300), *Ch. concavicornis* (11700), *Cos. radiatus* (10600), Others (9990)

Table 6 (3). Plankton volume data (30cm × 150cm,XX 13 net)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Wire run out (m)	Wire angle	Revolutions of flow-meter
1	Ho 1 (3rd)	46-00N 144-00E	1958 July 9	1940	100	27	460
2	Ho 2 (3rd)	48-00N 146-00E	10	1315	〃	8	178 ?
3	Ho 3 (3rd)	49-30N 145-30E	10	2357	〃	32	408
4	Ho 4 (3rd)	49-30N 147-20E	11	0935	〃	39	500
5	Ho 5 (3rd)	50-30N 149-00E	11	2010	〃	30	307
6	Ho 6 (3rd)	51-40N 147-07E	12	0650	〃	30	443
7	Ho 8 (3rd)	53-30N 145-00E	13	0128	〃	34	400
8	Ho 10 (3rd)	55-00N 148-00E	13	1937	〃	35	423
9	Ho 11 (3rd)	55-00N 146-00E	14	1155	〃	10	420
10	Ho 12 (3rd)	55-10N 144-10E	14	0447	〃	19	—
11	Ho 13 (3rd)	56-00N 147-17E	14	2030	〃	13	—
12	Ho 14 (3rd)	55-49N 147-06E	15	1135	〃	7	265
13	Ho 15 (3rd)	56-00N 149-00E	15	1921	〃	30	140 ?
14	Ho 16 (3rd)	57-00N 151-00E	16	1505	〃	19	235
15	Ho 17 (3rd)	57-30N 153-00E	17	2302	〃	19	259
16	Ho 18 (3rd)	56-30N 154-30E	17	0830	〃	40	196 ?
17	Ho 20 (3rd)	55-00N 151-00E	18	1205	〃	63	—
18	Ho 21 (3rd)	54-00N 153-00E	18	2326	〃	40	230
19	Ho 22 (3rd)	52-30N 155-00E	19	1225	〃	49	380
20	Ho 23 (3rd)	52-30N 153-00E	20	1605	〃	0	140 ?

in 1958 cruise 4 (3) to the western-north of Kurile Chain

Volume of water filtered (m^3)	Displacement volume per $1000m^3$ (cc)	Dominant species (Individuals or co[onies/m^3)
2.3	1087	*Ch. concavicornis* (302500), *Ch. convolutus* (140800), Others (117400)
0.9	3371	*Ch. concavicornis* (179900), *Ch. convolutus* (9160), *Ch. atlanticus* (33300), Others (43316)
2.0	10051	*Ch. concavicornis* (583200), *Ch. convolutus* (20800), Micro-copepod (37500), Others (33300)
2.5	1000	*Ch. concavicornis* (109300), *Ch. atlanticus* (101300), *Ch. convolutus* (82700), Others (50700)
1.5	1623	*Ch. concavicornis* (144430), *Ch. atlanticus* (72200), *Ch. convolutus*(22200), Others (38885)
2.2	1351	*Ch. atlanticus* (140100), *Ch. concavicornis* (79500), *Ch. convolutus* (22700) Others (41700)
2.0	250	*Ch. atlanticus* (204000), *Coscinodicus radiatus* (76500), Others (39000)
2.1	472	*Ch. atlanticus* (172800), *Cos.radiatus* (57120), Others (112800)
—	—	*Rh. hebetata* f. *s.* (abundant), *Ch. atlanticus* (very common), *Rh. alata* (very common), Others (occasional)
—	—	*Ch. atlanticus* (abundance), *Rh. hebetata* f. *s.* (very common), *Cos. radiatus* (very common), Others (occasional)
—	—	*Rh. hebetata* f. *s.* (abundant), *Ch. atlanticus* (very common), *Rh. alata* (common), Others (occasional)
1.3	394	*Rh. hebetata* f. *s.* (318400), *Ch. atlanticus* (108400), *Rh. alata* (186900), Others (147700)
0.7	2985	*Th'rix longissima* (372800), *Ch. atlanticus* (85700), *Ceratium arcticum* (47100), Others (22300)
1.1	1327	*Th'rix longissima* (39100), *Ch. atlanticus* (25500), *Ceratium arcticum* (13600), Others (69100)
1.3	2800	*Th'rix longissima* (122300), *Ch.atlanticus* f. *audax* (78400), *Ch. atlanticus* (55400) *Cos. radiatus* (57700), Others (140800)
0.9	1064	*Th'rix longissima* (65600), *Ceratium logipes* (53300), *Ch. atlanticus* (27800), *Peridinium* sp. (28900), Others (85600)
—	—	*Ch.atlanticus* (abundant), *Ch. concavicornis* (very common), Others (very common)
1.1	451	*Ch. atlanticus* (24200), *Ceratium arcticum* (15700), *Ceratium longipes* (11500), *Peridinium* sp. (12100), Others (31500)
1.8	273	Micro-copepod (20500), *Peridinium* sp. (8880), *Ceratium logipes* (6105), Others (9990)
1.0	1493	*Ceratium longipes* (55000), Micro-copepod (24000), *Ceratium arcticum* (15000), Others (16000)

Table 6 (3).

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Wire run out	Wire angle	Revolutions of flow-meter
21	Ho 24 (3rd)	52-20N 151-00E	21	0250	〃	7	223
22	Ho 26 (3rd)	51-00N 152-00E	22	1605	〃	11	290
23	Ho 27 (3rd)	51-00N 155-00E	23	0945	〃	6	217
24	Ho 28 (3rd)	50-00N 154-00E	23	1840	〃	3	165 ?
25	Ho 30 (3rd)	48-22N 148-30E	25	1247	〃	9	290
26	Ho 31 (3rd)	47-00N 149-00E	26	0057	〃	25	330
27	Ho 32 (3rd)	45-53N 148-04E	27	1043	〃	12	238
28	Ho 33 (3rd)	46-00N 146-00E	27	1958	〃	15	223

(Continued)

Volume of water filtered (m^3)	Displacement volume per $1000m^3$ (cc)	Dominant species (Individuals or colonies/m^3)
1.1	1402	*Ceratium longipes* (98200), *Ch. atlanticus* (40000), Micro-copepod (26400), *Ceratium arcticum* (26400), Others (31800)
1.2	360	Micro-copepod (127700), *Ch. atlanticus* (127705), *Ceratium longipes* (116700), *Ceratium arcticum* (83300), Others (138900)
—	—	*Ceratium longipes* (very common), *Ch. atlanticus* (very common), *Th'rix longissima* (common), Micro-copepod (common), Others (occasional)
0.8	2532	*Ch. atlanticus* (215600), *Th'rix longissima* (101300), *Rh.hebetata* f. *s.* (71300), Others (241900)
1.2	833	*Ch. atlanticus* (36600), *Th'rix longissima* (112300), *Cos. radicans* (6700), Others (17500)
1.6	1572	*Ch. radicans* (203800), *Ch. atlanticus* (52500), *Th'rix longissima* (28100), Others (61900)
1.1	3070	*Ch. radicans* (583600), Micro-copepod (43600), *Ch. atlanticus* (46400), Others (152700)
1.1	1869	*Ch. radicans* (343600), Others (73600)

Table 6 (4). Plankton volume data (30cm × 150cm, XX13 net)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Wire run out (m)	Wire angle	Revolutions of flow-meter
1	Ho 1 (4th)	42-33N 145 00E	1958 Aug 7	1300	100	—	—
2	Ho 2 (4th)	43-10N 146-30E	7	2320	〃	10	280
3	Ho 3 (4th)	43-45N 148-00E	8	0900	〃	—	248
4	Ho 4 (4th)	44-30N 150-00E	8	2145	〃	14	333
5	Ho 5 (4th)	45-38N 151-20E	9	1310	〃	11	374
6	Ho 6 (4th)	47-14N 153-15E	10	0435	〃	43	263
7	Ho 7 (4th)	48-27N 154-47E	10	1600	〃	45	352
8	Ho 8 (4th)	49-31N 155-42E	11	0015	〃	29	292
9	Ho 11 (4th)	51-59N 155-40E	15	1200	〃	15	392
10	Ho 12 (4th)	50-35N 154-45E	17	1820	〃	18	272
11	Ho 13 (4th)	49-20N 152-45E	19	2015	〃	11	174
12	Ho 14 (4th)	48-21N 151-13E	20	0630	〃	37	412

in 1958 cruise 4 (4) to Okhotsk Sea

Volume of water filtered (m^3)	Displacement volume per $1000m^3$ (cc)	Dominant species (Individuals or colonies/m^3)
1.1	0885	Micro-copepod (5450), *Ch. atlanticus* (605), *Th'rix longissima* (605), Others (3630)
1.4	1852	*Rh. hebetata* f. *s.* (403500), *Ch. atlanticus* (125000), *Ch. concavicornis* (103600), Others (100000)
1.2		*Rh. hebetata* f. *s.* (95000), Micro-copepod (33800), *Th'rix longissima* (62500), *Ch. convolutus* (36300), Others (103800)
1.6	5625	*Ch. atlanticus* (80000), Micro-copepod (56900), *Th'rix longissima* (52500), Others (100600)
1.8	1389	*Ch. atlanticus* (808300), *Rh. hebetata* f. *s.* (300000), Others (375000)
1.3	1587	*Th'rix longissima* (326900), *Ch. atlanticus* (400000), *Ch. convolutus* (157700), *Rh.hebetata* f. *s.* (138500), Others (238500)
1.7	1775	*Ch. curvisetus* (1223500), *Ch. furcellatus* ? (164700), Others (423500)
1.4	4286	*Ch.* debilis (1910700), *Ch. hosaticus* ? (500000), *Rh. hebetata* f. *s.* (357100), Others (1428600)
1.9	0265	Micro-copepod (18400), *Ceratium logipes* (4210), *Coscinodiscus radiatus* (3700), Others (6840)
1.3	1527	Micro-copepod (64600), *Ceratium longipes* (58400), Others (68400)
0.9	2976	*Ch. atlanticus* (486600), Micro-copepod (93300), *Ceratium longipes* (80000), Others (170000)
2.0	2020	*Ch. atlanticus* (273000), *Th'rix longissima* (100500), Micro-copepod (51000), Others (114000)

12. Data on Fish Larvae collected with Fish Larva Net
(稚魚ネット採集による稚魚記録)

Fish larva net, 130 cm in mouth diameter and 450 cm in length, was towed at the surface layer at a speed as low as about 2 knots for ten minutes keeping the net exposed to the extent of half of mouth ring above the sea surface, at every hydrographic station as well as at about one hour past of sunset time. (The same collection as in macroplankton collection; refer to explanation on p. 243.)

Identification of fish larvae was made by S. Sato, K. Kobayashi and the members of the Chair of Ichthyology of the University.

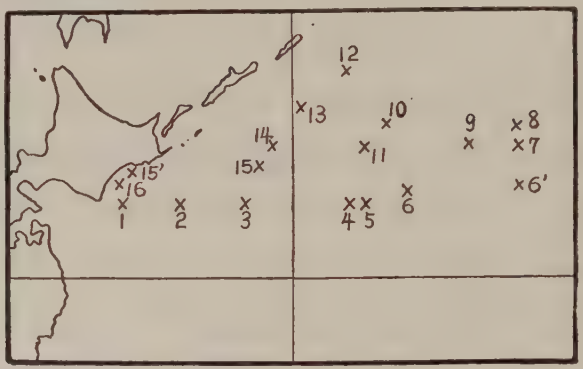

Fig. 2. Stations of fish larva net tow in 1958 cruise 4 (1st) of the "Hokusei Maru"

Table 7. Data on collection of fishe larvae in 1958 cruise 4 (1st) of the "Hokusei Maru"

* No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish-larva collected (Species or group)	Number of individuals	Range of total length (mm)
1	Ho 1(1st)	42°-00′ N 144°-00′ E	May 14	0900	No fish-larva		
2	Ho 2(1st)	42°-00′ N 146°-00′ E	14	1935	*Hemilepidotus* Cottidae (C)	5 1	15.6-28.9 28.0
3	Ho 3(1st)	42°-00′ N 148°-18′ E	15	0745	No fish-larva		
4	Ho 4(1st)	42°-00′ N 150°-00′ E	15	1730	No fish-larva		
5	Ho 5(1st)	42°-00′ N 152°-00′ E	16	1540	No fish-larva		
6	Ho 8(1st)	42°-17′ N 158°-00′ E	18	1400	No fish-larva		
6′		42°-20′ N 158°-00′ E	18	1800	*Hexagrammos*	2	36.1-52.8
7	Ho 9(1st)	43°-30′ N 158°-00′ E	19	0100	*Myctophum californiense* *Tarletonbeania crenularis* *Hexagrammos*	2 165 3	81.1-85.1 27.4-71.5 46.2-52.4
8	Ho 10(1st)	45°-00′ N 158°-00′ E	19	1900	*Hexagrammos* *Hemilepidotus*	1 116	32.1 13.7-23.0
9	Ho 11(1st)	44°-33′ N 156°-10′ E	20	0800	*Hexagrammos* *Hemilepidotus*	1 12	29.4 11.5-18.6
10	Ho 12(1st)	44°-03′ N 154°-18′ E	20	1910	No fish-larva		
11	Ho 13(1st)	43°-30′ N 152°-30′ E	21	0700	No fish-larva		
12	Ho 14(1st)	45°-00′ N 151°-53′ E	21	1853	*Bathymaster* *Pleurogrammus monopterygius* *Hexagrammos* *Hemilepidotus*	1 1 2 18	39.5 20.0 21.4-33.8 13.4-24.9
13	Ho 15(1st)	44°-39′ N 150°-17′ E	22	0535	*Hemilepidotus*	5	13.2-22.8

* Fig. 2

Table 7. (Continued)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish-larva collected (Species or group)	Number of individuals	Range of total length (mm)
14	Ho 16(1st)	43°-33′ N 149°-23′ E	22	1605	*Hexagrammos*	1	25.0
15		43°-01′ N 148°-52′ E	22	1920	*Bathymaster*	1	45.7
					Pleurogrammusterygius monop	1	27.3
					Hexagrammos	5	26.4-36.2
					Hemilepidotus	63	12.4-30.6
15′		43°-10′ N 145°-13′ E	23	1415	*Hexagrammos*	1	37.2
					Hemilepidotus	1	37.6
16	Ho 18(1st)	42°-30′ N 144°-56′ E	24	0630	No fish-larva		

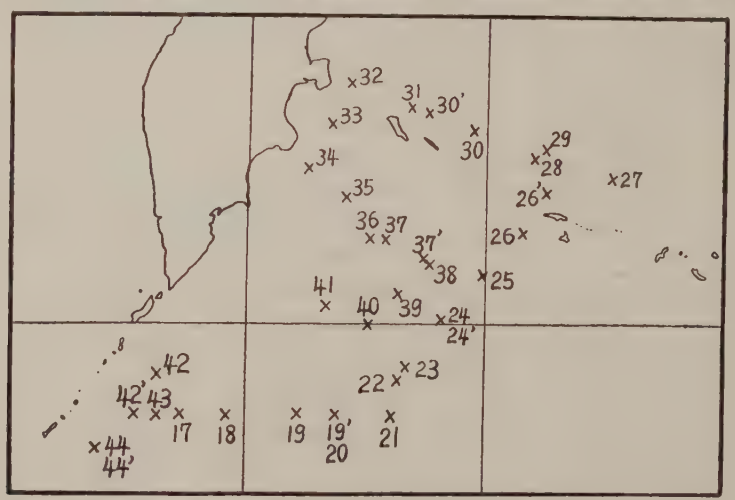

Fig. 3. Stations of fish larva net tow in 1958 cruise 4 (2nd) of the "Hokusei Maru",

Table 8. Data on collection of fish larvae in 1958 cruise 4 (2nd) of the "Hokusei Maru"

* No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish-larva collected (Species or group)	Number of individuals	Range of total length (mm)
17	Ho 2(2nd)	47°-30′ N 157°-00′ E	Jun 11	0930	*Hemilepidotus*	3	17.8-22.6

* Fig. 3

Table 8. (Continued)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish-larva collected (Species or group)	Number of individuals	Range of total length (mm)
18	Ho 3(2nd)	47°-28′ N	June 11	1850	*Ammodytes hexapterus*	1	40.0
		159°-00′ E			*Pleurogrammus monopterygius*	1	38.0
					Hexagrammos	1	26.5
					Hemilepidotus	64	15.2-28.2
19	Ho 4(2nd)	47°-30′ N	12	0520	*Pleurogrammus monopterygius*	1	34.8
		161°-00′ E			*Hexagrammos*	3	27.2-32.9
19′		47°-34′ N	12	1740	*Hemilepidotus*	18	17.0-26.0
		163°-46′ E					
20	Ho 5(2nd)	47°-34′ N	12	1800	*Pleurogrammus monopterygius*	1	36.7
		163°-00′ E					
21	Ho 6(2nd)	47°-33′ N	13	0930	*Hexagrammos*	2	32.5-34.0
		165°-00′ E			*Hemilepidotus*	7	19.1-21.3
22		48°-30′ N	13	1840	*Pleurogrammus monopterygius*	1	41.5
		166°-12′ E			*Hemilepidotus*	23	16.8-30.0
23	Ho 7(2nd)	48°-47′ N	13	2210	*Tarletonbeania crenularis*	4	44.5-51.8
		166°-34′ E			*Pleurogrammus monopterygius*	1	26.3
24	Ho 8(2nd)	50°-04′ N	14	0910	No fish-larva		
		168°-00′ E					
24′		50°-04′ N	14	1800	*Pleurogrammus monopterygius*	3	27.2-33.8
		168°-00′ E			*Hexagrammos*	2	34.6-42.2
					Hemilepidotus	4	15.7-19.9
25	Ho 9(2nd)	51°-18′ N	14	2020	*Tarletonbeania crenularis*	1	41.8
		169°-56′ E			*Hexagrammos*	1	37.6
26	Ho 10(2nd)	52°-30′ N	15	0710	No fish-larva		
		171°-34′ E					
26′		53°-27′ N	15	1800	*Lumpenus*	3	28.8-35.3
		172°-34′ E			*Pleurogrammus monopterygius*	3	14.0-47.8
					Hexagrammos	3	15.4-21.7
					Hemilepidotus	3	13.9-22.0
27	Ho 11(2nd)	53°-50′ N	16	0935	No fish-larva		
		175°-19′ E					
28		54°-16′ N	16	1800	*Lumpenus*	3	32.8-36.5
		172°-02′ E			*Anoplopoma fimbria*	2	11.7-15.2
					Pleurogrammus monopterygius	1	28.1

Table 8. (Continued)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish larva collected (Species or group)	Number of individuals	Range of total length (mm)
29	Ho 12(2nd)	54°-24′ N 172°-22′ E	June 16	2145	*Lumpenus*	11	22.8-36.8
					Anoplopoma fimbria	3	13.7-16.0
					Pleurogrammus monopterygius	6	21.8-38.6
					Hexagrammos	2	18.2-24.5
30	Ho 13(2nd)	55°-01′ N 169°-38′ E	17	1000	No fish-larva		
30′		55°-26′ N 167°-48′ E	17	1850	*Lumpenus*	9	24.0-27.5
					Pleurogrammus monopterygius	2	30.2-42.4
					Hemilepidotus	16	16.5-29.6
31	Ho 14(2nd)	55°-35′ N 167°-00′ E	17	2200	*Bathymaster*	2	44.4
					Hexagrammos	3	33.6-36.2
					Hemilepidotus	19	16.9-30.5
					Cottidae (B)	1	13.4
					Pleuronectidae	1	26.3
32	Ho 15(2nd)	56°-09′ N 164°-14′ E	18	1100	*Oncorhynchus keta*	1	33.6
					Hemilepidotus	1	18.5
					Unidentified	1	16.9
33	Ho 16(2nd)	55°-07′ N 163°-30′ E	18	1900	*Lumpenus*	1	27.4
					Hexagrammos	1	32.8
					Hemilepidotus	7	20.0-25.8
34	Ho 17(2nd)	54°-02′ N 162°-30′ E	19	0345	*Hemilepidotus*	2	12.2-18.7
35	Ho 18(2nd)	53°-21′ N 164°-03′ E	19	1200	No fish-larva		
36		52°-42′ N 165°-08′ E	19	1830	No fish-larva		
37	Ho 19(2nd)	52°-28′ N 165°-40′ E	20	0610	No fish-larva		
37′		51°-52′ N 167°-24′ E	20	1555	*Pleurogrammus monopterygius*	3	26.4-47.5
38		51°-41′ N 167°-15′ E	20	1900	*Lumpenus*	1	31.5
					Pleurogrammus monopterygius	1	32.4
					Hexagrammos	2	21.6-24.8
					Hemilepidotus	8	21.3-25.4

Table 8. (Continued)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish-larva collected (Species or group)	Number of individuals	Range of total length (mm)
39	Ho 21(2nd)	50°-56′ N 166°-15′ E	June 21	0100	*Pleurogrammus monopterygius* *Hemilepidotus*	3 3	32.1-37.5 23.6-27.7
40	Ho 22(2nd)	50°-00′ N 165°-00′ E	21	1000	*Hemilepidotus*	1	14.2
41	Ho 23(2nd)	50°-40′ N 163°-05′ E	21	1815	No fish-larva		
42	Ho 28(2nd)	48°-40′ N 156°-07′ E	24	1005	*Hexagrammos*	2	35.1-38.7
42′		47°-38′ N 155°-07′ E	24	1815	*Pleurogrammus monopterygins* *Hemilepidotus*	6 2	31.9-49.8 25.0-27.8
43	Ho 29(2nd)	47°-30′ N 150°-00′ E	25	0645	No fish-larva		
44	Ho 30(2nd)	46°-30′ N 153°-33′ E	25	1650	*Hemilepidotus*	1	26.2
44′		46°-25′ N 153°-25′ E	25	1800	No fish-larva		

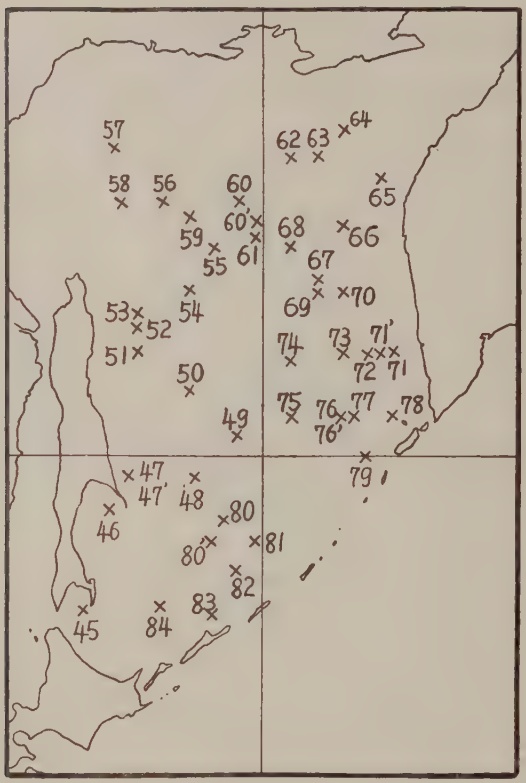

Fig. 4. Stations of the larva net tow in 1958 cruise 4 (3rd) of the "Hokusei Maru"

Table 9. Data on collection of fish larvae in 1958 cruise 4 (3rd) of the "Hokusei Maru"

* No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish-larva collected (Species or group)	Number of individuals	Range of total length (mm)
45	Ho 1(3rd)	46°-00′ N 144°-00′ E	July 9	2000	*Ammodytes hexapterus* *Hemilepidotus*	39 1	28.0-41.2 13.8
46		48°-50′ N 145°-01′ E	10	2022	*Lumpenus* *Hemilepidotus*	73 1	26.4-37.9 31.8
47	Ho 3(3rd)	49°-30′ N 145°-30′ E	11	0025	*Hemilepidotus*	1	38.0

* Fig. 4

Table 9. (Continued)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish-larva collected (Species or group)	Number of individuals	Range of total length (mm)
47′		49°-30′ N 145°-30′ E	July 11	0040	*Hexagrammos* *Hemilepidotus*	2 1	53.9-55.0 30.1
48	Ho 4(3rd)	49°-30′ N 147°-20′ E	11	1010	No fish-larva		
49	Ho 5(3rd)	50°-30′ N 149°-00′ E	11	2040	*Hexagrammos* *Hemilepidotus*	2 4	34.2-40.7 29.6-35.6
50	Ho 6(3rd)	51°-40′ N 147°-07′ E	12	0710	No fish-larva		
51	Ho 7(3rd)	52°-45′ N 145°-00′ E	12	1920	*Hemilepidotus*	1	23.9
52		53°-10′ N 145°-00′ E	12	2040	No fish-larva		
53	Ho 8(3rd)	53°-30′ N 145°-00′ E	13	0045	*Lampetra japonica japonica*	1	184.0
54	Ho 9(3rd)	54°-00′ N 147°-00′ E	13	1130	No fish-larva		
55	Ho 10(3rd)	55°-00′ N 148°-00′ E	13	2010	No fish-larva		
56	Ho 11(3rd)	56°-00′ N 146°-00′ E	14	0424	No fish-larva		
57	Ho 12(3rd)	57°-10′ N 144°-10′ E	14	1225	No fish-larva		
58	Ho 13(3rd)	56°-00′ N 145°-17′ E	14	2055	*Lumpenus*	2	19.6-22.8
59	Ho 14(3rd)	55°-49′ N 147°-06′ E	15	1250	No fish-larva		
60	Ho 15(3rd)	56°-00′ N 149°-00′ E	15	1935	*Lumpenus*	16	27.0-33.3
60′		56°-00′ N 149°-00′ E	15	1945	*Hexagrammos*	5	32.8-39.4
61		56°-00′ N 149°-00′ E	15	2040	*Lumpenus* *Hexagrammos*	33 1	20.3-33.9 31.6

Table 9. (Continued)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish-larva collected (Species or group)	Number of individuals	Range of total length (mm)
62	Ho 16(3rd)	57°-00′ N 151°-00′ E	July 16	1330	*Lumpenus*	8	ca 28.0
63		57°-00′ N 152°-00′ E	16	2040	*Ammodytes hexapterus* *Lumpenus* Gadidae	7 7 5	13.3-33.4 16.7-20.6 14.2-15.0
64	Ho 17(3rd)	57°-30′ N 153°-00′ E	16	2325	*Ammodytes hexapterus* *Lumpenus*	4 1	15.6-33.9
65	Ho 18(3rd)	56°-30′ N 154°-30′ E	17	0955	No fish-larva		
66	Ho 19(3rd)	55°-30′ N 153°-00′ E	17	1725	No fish-larva		
67		54°-10′ N 152°-00′ E	17	1925	No fish-larva		
68	Ho 20(3rd)	55°-00′ N 151°-00′ E	18	1235	No fish-larva		
69		54°-00′ N 152°-00′ E	18	2020	*Hexagrammos*	1	53.0
70	Ho 21(3rd)	54°-00′ N 153°-00′ E	18	2330	No fish-larva		
71	Ho 22(3rd)	52°-30′ N 155°-00′ E	19	1230	No fish-larva		
71′		52°-30′ N 154°-30′ E	19	1700	*Myoxocephalus* Pleuronectidae (A)	32 1	17.1-20.7 ca 7.7
72		52°-30′ N 154°-00′ E	19	1950	*Oncorhynchus keta* *Mallotus* *Ammodytes hexapterus* *Myoxocephalus* *Podothecus* (A) *Podothecus* (B) *Aspidophoroides* Liparidae Gadidae	1 2 31 87 16 11 1 5 4	70.6 58.2-58.8 14.9-32.8 16.0-21.2 18.7-23.7 20.5-25.4 26.3 6.4- 9.5 13.8-17.4
73	Ho 23(3rd)	52°-30′ N 153°-00′ E	20	1645	*Podothecus* (A)	1	

Table 9. (Continued)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish-larva collected (Species or group)	Number of individuals	Range of total length (mm)
74	Ho 24 (3rd)	52°-20′ N 151°-00′ E	July 21	0315	No fish-larva		
75	Ho 25 (3rd)	51°-00′ N 151°-00′ E	21	1430	No fish-larva		
76	Ho 26 (3rd)	51°-00′ N 153°-00′ E	22	1625	No fish-larva		
76′		51°-00′ N 151°-00′ E	22	1900	*Blepsias bilobus*	1	29.3
77		51°-00′ N 153°-22′ E	22	2005	Gadidae	1	19.6
78	Ho 27 (3rd)	51°-00′ N 155°-00′ E	23	1025	No fish-larva		
79	Ho 28 (3rd)	50°-00′ N 154°-00′ E	23	1940	*Ammodytes hexapterus* *Hemilepidotus* Liparidae	5 3 2	32.3-33.3 23.6-30.1 16.4-18.7
80	Ho 30 (3rd)	48°-22′ N 148°-30′ E	24	1430	*Lumpenus*	2	
80′		47°-50′ N 148°-00′ E	24	1950	*Ammodytes hexapterus* *Lumpenus* *Pleurogrammus azonus*	5 14 2	28.1-37.2 26.8-34.2 156.5-180.0
81		47°-50′ N 149°-40′ E	25	2025	*Ammodytes hexapterus* *Hexagrammos* *Hemilepidotus*	17 1 3	28.4-41.2 51.4 22.9-32.0
82	Ho 31 (3rd)	47°-00′ N 149°-00′ E	26	0210	No fish-larva		
83	Ho 32 (3rd)	45°-53′ N 148°-04′ E	26	1115	*Ammodytes hexapterus* *Hexagrammos*	1 1	26.3 54.6
84	Ho 33 (3rd)	46°-00′ N 146°-00′ E	26	2115	*Theragra chalcogramma*	1	48.4

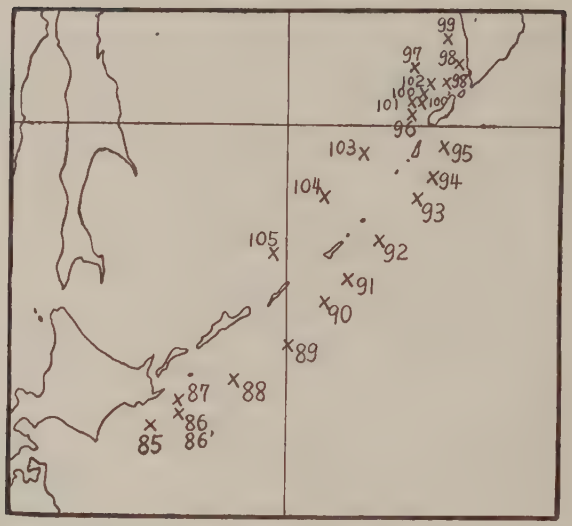

Fig. 5. Stations of the larva net tow in 1958 cruise 4 (4th) of the "Hokusei Maru"

Table 10. Data on collection of fish larvae in 1958 cruise 4 (4th) of the "Hokusei Maru"

* No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish-larva collected (Species or group)	Number of individuals	Range of total length (mm)
85	Ho 1 (4th)	42°-33′ N 145°-00′ E	Aug. 7	1337	*Cololabis saira*	2	38.5-44.4
86		42°-56′ N 146°-07′ E	7	1936	*Notoscopelus elongatus* *Cololabis saira* *Hemilepidotus*	1 1 4	164.4 82.3 11.0-14.7
86′		42°-56′ N 146°-07′ E	7	1950	*Cololabis saira* Gadidae	19 4	56.0-256.0 13.8-17.3
87	Ho 2 (4th)	43°-10′ N 146°-30′ E	7	2328	*Cololabis saira*	1	179.8
88	Ho 3 (4th)	43°-45′ N 148°-00′ E	8	0924	No fish-larva		
89	Ho 4 (4th)	44°-30′ N 150°-00′ E	8	2144	*Tarletonbeania crenularis* *Cololabis saira*	1 1	42.3 27.8
90	Ho 5 (4th)	45°-38′ N 151°-20′ E	9	1400	No fish-larva		

* Fig. 5

Table 10. (Continued)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish-larva collected (Species or group)	Number of individuals	Range of total length (mm)
91		46°-15′ N 152°-05′ E	Aug. 9	1910	*Tarletonbeania crenularis*	1	61.0
92	Ho 6(4th)	47°-14′ N 153°-15′ E	10	0452	No fish-larva		
93	Ho 7(4th)	48°-27′ N 154°-47′ E	10	1631	No fish-larva		
94		48°-55′ N 155°-18′ E	10	1908	*Ammodytes heoapterus* *Lumpenus* *Hemilepidotus* Liparidae	1 351 1 1	40.2 31.0-39.3 13.9 17.5
95	Ho 8(4th)	49°-31′ N 155°-42′ E	11	0026	*Ammodytes hexapterus* *Lumpenus* *Hemilepidotus*	9 56 9	26.8-45.5 29.5-37.8 30.3-37.5
96	Ho 10(4th)	51°-11′ N 154°-26′ E	11	0935	*Lumpenus* *Blepsias bilobus*	3 1	29.1-33.6 37.2
97		51°-11′ N 154°-26′ E	11		Cottidae (A) Liparidae	1 1	21.0 19.6
98		51°-22′ N 155°-14′ E	12	1917	*Ammodytes hexapterus* *Blepsias bilobus* *Eumicrotremus orbis orbis*	5 1 1	39.8-50.0 34.1 41.0
98′		51°-00′ N 155°-35′ E	13	1840	*Anarrhichas orientalis* *Hemilepidotus*	1 1	116.2 28.5
99		52°-00′ N 155°-44′ E	15	1209	No fish-larva		
100		50°-36′ N 154°-36′ E	16	1850	*Ammodytes hexapterus*	1	43.5
100′		50°-42′ N 154°-45′ E	17	1840	*Ptilichthys goodei* *Hemilepidotus*	3 2	160.0-165.0 31.1-33.2
101		50°-42′ N 154°-45′ E	17	1909	*Ptilichthys goodei* *Hexagrammos*	3 2	149.0-164.0 53.0-54.2
102		50°-38′ N 154°-56′ E	18	1855	*Ammodytes heoapterus* *Ptilichthys goodei* *Hexagrammos*	4 1 1	38.8-55.2 135.0 58.0

Table 10. (Continued)

No. of collection	Corresponding hydrographic station	Position	Ship's date	Ship's time	Fish-larva collocted (Species or group)	Number of individuals	Range of total length (mm)
103	Ho 11(4th)	51°-59′ N 155°-40′ E	Aug. 19	2031	No fish-larva		
104	Ho 12(t4h)	50°-35′ N 154°-45′ E	20	0651	No fish-larva		
105	Ho 13(4th)	49°-20′ N 152°-45′ E	20	1836	*Ammodytes hexapterus*	1	47.6

13. Data on Salmon Gill-Net Fishing
(鮭鱒流網試驗)

Table 11. Data on catch of salmon in 1958 cruis 4 of the

No. of cruise	No. of fishing	Data and time (J.C.T.)				Position of net-set		Direction of drift	Weather	Wind		Surface Temperature (°C)
		Net set		Net haul								
		Date	Time	Date	Time	Lat.	Long.	"toward"		Direction	Force	
1st	1	May 15	1740	May 16	0300	42°30′ N	151°13′ E		c	S S E	2	3.4
〃	2	May 22	1810	May 23	0300	43°30′ N	149°19′ E		f	S E	2	3.4
2nd	1	June 12	1740	June 13	0215	47°34′ N	163°46′ E		c	E N E	2	4.6
〃	2	June 15	1740	June 16	0205	53°27′ N	173°45′ E		c	colm		6.0
〃	3	June 19	1800	June 20	0115	52°42′ N	165°08′ E		c	N E	1	6.4
〃	4	June 24	1815	June 25	0130	47°38′ N	155°07′ E		r	S S W	1	5.2
〃	5	June 25	1805	June 26	0200	46°25′ N	153°57′ E		f	N E	1	5.9
3rd	1	July 14	1932	July 15	0200	56°00′ N	145°17′ E	45°	c	S W	2	3.7
〃	2	July 15	1930	July 16	0210	56°00′ N	149°00′ E	237°	f	E	2	8.5
〃	3	July 17	1900	July 18	0200	55°22′ N	152°41′ E	210°	b	W N W	2	9.1
〃	4	July 19	1837	July 20	0200	52°36′ N	155°55′ E	215°	b	N	3	11.0
〃	5	July 22	1825	July 23	0210	51°00′ N	153°21′ E	270°	o	E	1	9.5
〃	6	July 23	1920	July 24	0200	50°00′ N	154°00′ E	220°	o	S	1	9.8
4th	1	Aug. 11	1726	Aug. 12	0200	51°11′ N	154°26′ E	90°	f	N W	1	9.8
〃	2	Aug. 12	1735	Aug. 13	0300	51°22′ N	155°15′ E	180°	o	S S E	1	9.4
〃	3	Aug. 15	1725	Aug. 16	0255	51°36′ N	155°54′ E	135°	o	S	3	10.4
〃	4	Aug. 16	1640	Aug. 17	0310	50°36′ N	154°36′ E	90°	o	colm		10.6
〃	5	Aug. 17	1635	Aug. 18	0310	50°35′ N	154°45′ E	100°	o	N W	2	10.5
〃	6	Aug. 18	1628	Aug. 19	0315	50°37′ N	154°46′ E	60°	o	S W	2	11.0

"Hoksei Maru" to the North Pacific and the Okhotsk Sea

Colour of sea	Transparency (m)	Amount net cast one shakle =49.2m long	Number of fish caught according to species						Number of catch per one shakle
			Sockeye (ベニ)	Chum (シロ)	Pink (マス)	Silver (ギン)	King (マスノスケ)	Total (計)	
		50	0	9	303	0	0	312	6.24
		35	0	18	26	0	0	44	1.26
		50	19	71	82	0	0	172	3.44
		52	2	44	11	0	0	57	1.10
		52	26	50	118	0	0	194	3.73
		76	0	79	101	0	0	180	2.37
		76	0	468	203	0	0	671	8.83
		116	0	53	20	0	1	74	0.64
		115	9	145	358	0	0	512	4.45
4	14	115	0	38	38	0	1	77	0.67
4	14	115	14	265	85	0	0	364	3.17
4	14	115	14	115	617	21	1	768	6.68
4	10	115	4	8	84	4	2	102	0.89
		111	30	35	22	115	0	202	1.82
5		111	23	14	17	28	0	82	0.74
		111	20	16	23	11	0	70	0.63
4		104	27	20	51	165	1	264	2.54
		98	13	25	20	70	0	128	1.31
5	9	98	62	82	20	189	0	353	3.60

14. Data on Measurement of Biological Characters of Salmon
(鮭鱒生物学的測定記録)

Measurment was made by research men and age determination was made by T. Yonemori (Hokkaido Regional Fisheries Research Laboratory).

Abbreviations :

Sex, F. Female
M. Male
F.L. Fork length
S-E. Distance from eye center to tip of snout
B.W. Body weight
G.W. Gonad weight

Table 12. Data on measurement of salmon in 1958 cruise 4 of the "Hokusei Maru" to the North Pacific and the Okhotsk Sea

a) Data in May 1958 cruise 4

Chum salmon シロザケ

No. of fishing	Sex	F.L. (mm)	B.W. (g)	Age
1	F	567	2250	4
	F	553	2100	4
	F	534	2300	4
	F	570	2650	—
	M	540	1650	5
	M	569	2500	4
	M	569	2100	4
	M	552	2100	4
	M	546	2100	4
2	F	539	1900	5
	F	630	3000	4
	F	585	2550	4
	F	571	2150	4
	F	560	2450	4
	F	552	2100	4
	M	636	3400	5
	M	547	2100	5
	M	597	2900	4
	M	597	2900	4
	M	576	2300	4
	M	568	2150	4
	M	555	2200	4
	M	541	2150	4
	M	532	1850	4
	M	522	1650	4
	M	610	2700	—
	—	535	2200	4

b) Data in June 1958 cruise 4

1. Chum salmon シロザケ

No. of fishing	Sex	F. L. (mm)	S-E (mm)	B. W. (g)	Age
1	F	576	57	2200	5
	F	544	45	1950	5
	F	534	46	2000	5
	F	528	42	1550	5
	F	504	43	1700	5
	F	562	47	2000	4
	F	561	50	2200	4
	F	555	48	2100	4
	F	552	46	1950	4
	F	548	46	2050	4
	F	548	46	2000	4
	F	542	47	1800	4
	F	541	45	2000	4
	F	538	47	2050	4
	F	524	44	1450	4
	F	524	42	1600	4
	F	523	43	1700	4
	F	515	43	1700	4
	F	515	39	1700	4
	F	508	42	1700	4
	F	508	42	1600	4
	F	498	42	1550	4
	F	491	41	1500	4
	F	484	37	—	4
	F	563	49	2200	—
	M	561	53	2250	4
	M	553	50	2150	4
	M	549	52	1950	4

Table 12. (Continued)

No. of fishing	Sex	F. L. (mm)	S-E (mm)	B. W. (g)	Age
1	M	538	48	2100	4
	M	530	47	1800	4
	M	529	48	1900	4
	M	511	46	1550	4
	M	506	47	1600	4
	M	508	46	1800	3
	M	482	43	1200	3
	M	479	43	1200	3
	M	476	44	1350	3
	—	570	49	2100	5
	—	545	44	2050	—
2	F	626	52	2850	5
	F	589	47	2650	5
	F	604	52	2750	4
	F	586	51	2400	4
	F	570	46	2450	4
	F	567	48	2400	4
	F	560	45	1850	4
	F	556	48	2550	4
	F	550	43	2050	4
	F	545	48	1900	4
	F	540	46	2000	4
	F	539	47	2050	4
	F	539	45	1950	4
	F	528	42	1800	4
	F	571	44	2300	—
	F	527	49	2000	—
	M	507	42	1600	5
	M	609	57	3000	4
	M	592	53	2800	4
	M	584	55	2800	4
	M	580	52	2150	4
	M	560	53	2650	4
	M	529	48	1950	4
	M	526	50	1900	4
	M	508	44	1600	4
	M	509	45	1750	3
	M	555	52	2250	—
	—	658	61	3700	—
	—	535	45	1950	—
	—	532	44	—	—
2	—	505	41	1700	4
3	F	599	52	2750	5
	F	583	48	2700	5
	F	581	48	2300	5
	F	548	46	2000	5
	F	593	50	3000	4
	F	572	49	2650	4
	F	566	43	2100	4
	F	565	44	2150	4
	F	554	47	2200	4
	F	551	45	2000	4
	F	550	43	2050	4
	F	548	45	2300	4
	F	542	44	2100	4
	F	535	42	1850	4
	F	513	43	1650	4
	F	510	43	1650	4
	F	486	43	1550	4
	F	470	39	1150	4
	F	464	38	1300	3
	M	629	58	2850	5
	M	626	57	3000	5
	M	542	45	2050	5
	M	580	49	2700	4
	M	574	53	2150	4
	M	569	50	2350	4
	M	565	53	2200	4
	M	558	50	2250	4
	M	550	49	2050	4
	M	537	50	2000	4
	M	534	45	1950	4
	M	531	44	1750	4
	M	525	46	1800	4
	M	523	48	1650	4
	M	523	45	1750	4
	M	515	47	1800	4
	M	512	41	1500	4
	M	505	42	1550	4
	M	491	44	1300	4
	M	529	47	1850	3
	M	503	43	1450	3

Table 12. (Continued)

No. of fishing	Sex	F. L. (mm)	S-E (mm)	B. W. (g)	Age
4	F	602	50	2800	5
	F	584	50	2300	5
	F	579	51	2700	5
	F	576	47	2400	5
	F	565	43	2400	5
	F	563	47	2150	5
	F	604	51	3000	4
	F	596	48	2550	4
	F	589	48	2900	4
	F	587	47	2550	4
	F	574	48	2800	4
	F	567	47	2350	4
	F	561	46	2400	4
	F	556	47	2100	4
	F	554	47	2200	4
	F	551	46	2250	4
	F	547	48	2200	4
	F	546	45	2000	4
	F	539	46	2150	4
	F	537	46	2200	4
	F	532	47	2050	4
	F	531	46	2100	4
	F	530	46	2050	4
	F	527	42	1800	4
	F	524	44	1950	4
	F	524	42	1900	4
	F	519	41	1700	4
	F	509	41	1800	4
	F	497	40	1450	4
	F	482	36	1450	3
	F	542	43	1950	—
	M	589	51	2500	5
	M	579	51	2500	4
	M	572	55	2900	4
	M	572	51	2200	4
	M	571	50	2600	4
	M	563	48	2450	4
	M	558	51	2400	4
	M	558	48	2000	4
	M	554	50	2000	4
4	M	544	54	2300	4
	M	541	48	2100	4
	M	539	50	2400	4
	M	536	49	2050	4
	M	528	46	1900	4
	M	523	47	1700	4
	M	490	44	1500	4
	M	515	43	1600	3
	M	470	42	1350	3
	M	582	54	2750	—
	M	531	46	1950	—
5	F	574	48	2400	5
	F	558	46	2250	5
	F	568	47	2450	4
	F	560	48	2200	4
	F	554	48	2250	4
	F	553	47	2250	4
	F	553	45	2350	4
	F	549	47	2450	4
	F	541	45	2400	4
	F	539	46	2200	4
	F	533	46	2250	4
	F	533	45	1950	4
	F	528	44	1900	4
	F	526	46	1900	4
	F	524	47	1800	4
	F	522	46	2100	4
	F	512	43	1750	4
	F	495	40	1750	4
	F	482	40	1500	4
	F	482	38	1300	4
	F	463	41	1500	4
	F	521	41	1650	3
	F	496	39	1500	3
	F	489	42	1500	3
	F	489	38	1500	3
	F	480	39	1350	3
	F	562	45	2400	—
	F	508	43	1600	—
	F	494	39	1700	—

Table 12. (Continued)

2. Sokeye salmon ベニザケ

No. of fishing	Sex	F. L. (mm)	S-E (mm)	B. W. (g)	Age
5	M	560	54	2550	4
	M	557	50	2200	4
	M	547	53	2400	4
	M	546	51	2250	4
	M	546	46	2100	4
	M	528	46	1950	4
	M	522	48	2000	4
	M	521	47	1900	4
	M	535	48	2100	3
	M	532	46	1900	3
	M	521	44	1800	3
	M	509	43	1800	3
	M	500	42	1800	3
	M	479	43	1300	3
	M	527	47	1900	—

No. of fishing	Sex	F. L. (mm)	S-E (mm)	B. W. (g)	Age
1	F	543	44	2000	7_4
	F	546	45	2200	6_2
	F	574	42	2150	6_3
	F	527	42	1900	5_2
	F	509	40	1700	5_2
	F	547	44	1800	—
	F	544	45	2050	—
	F	518	41	1600	—
	M	510	47	1700	5_3
	M	519	47	1900	—
	M	518	47	1700	—
	M	510	44	1600	—
	M	476	37	1250	—
2	F	567	43	2100	5_2
3	F	567	45	2700	6_3
	F	570	46	2400	5_2
	F	566	45	2500	5_2
	F	552	43	1950	5_2
	F	539	42	2250	5_2
	F	530	43	2150	5_2
	F	536	43	2100	5_3
	F	570	41	1850	4_2
	F	513	39	2000	4_2
	F	495	38	1600	4_2
	F	577	47	2400	—
	M	606	58	3500	5_2
	M	582	50	2650	5_2
	M	530	45	2150	5_2
	M	544	49	2200	5_1
	M	493	45	1550	4_2
	M	645	64	3700	—

Table 12. (Continued)

c) Data in July 1958 cruise 4

1. Pink salmon カラフトマス

No. of fishing	F.L. (mm)	B.W. (g)
1	552	2050
	529	1800
	490	1450
	487	1450
	483	1350
	470	1300
	470	1250
	460	1300
	456	1300
	456	1200
	454	1150
	453	1150
	452	1200
	450	1300
	442	1150
2	497	1750
	494	1600
	486	1550
	484	1550
	482	1500
	480	1550
	477	1450
	472	1250
	470	1250
	470	1150
	468	1450
	465	1500
	462	1400
	460	1400
	460	1350
	460	1300
	458	1300
	458	1300
	456	1500
	455	1300
	454	1300
	454	1250
	450	1100
2	446	1200
	422	1600
3	546	2100
	540	2100
	532	1900
	527	1450
	520	1650
	516	1800
	504	2100
	504	1500
	502	1650
	490	1800
	482	1550
	482	1450
	476	1450
	474	2000
	472	1800
	462	1500
	462	1250
	460	1450
	460	1300
	460	1250
	455	1300
	454	1500
	452	1300
	452	1250
	450	1300
	438	1150

Table 12. (Continued)

2. Chum salmon シロザケ

No. of fishing	Sex	F.L. (mm)	S-E (mm)	B.W. (g)	Age
1	F	606	46	2900	5
	F	585	49	2700	5
	F	567	46	2400	5
	F	558	44	2450	5
	F	574	44	2500	4
	F	507	47	2450	4
	F	570	46	2600	4
	F	567	43	2500	4
	F	555	45	2300	4
	F	553	46	2100	4
	F	552	45	2250	4
	F	552	44	2200	4
	F	544	42	2200	4
	F	543	43	1950	4
	F	542	42	2100	4
	F	540	46	2150	4
	F	540	43	2150	4
	F	535	46	2150	4
	F	532	42	1900	4
	F	532	39	1900	4
	F	528	47	1750	4
	F	527	43	1900	4
	F	526	44	1750	4
	F	510	43	1900	4
	F	508	41	1800	4
	F	508	39	1850	4
	F	492	40	1400	4
	F	506	40	1550	3
	F	500	38	1550	3
	F	568	44	2400	—
	M	601	52	2900	5
	M	590	55	2500	5
	M	643	60	3300	4
	M	576	57	2700	4
	M	575	53	2500	4
	M	574	54	2550	4
	M	558	52	2300	4
	M	552	51	2250	4
	M	552	46	2150	4
	M	550	51	2200	4

No. of fishing	Sex	F.L. (mm)	S-E (mm)	B.W. (g)	Age
1	M	541	47	1900	4
	M	538	48	2050	4
	M	534	52	2150	4
	M	534	43	—	4
	M	532	43	1900	4
	M	531	50	1900	4
	M	522	42	1950	4
	M	516	46	1650	4
	M	508	45	1600	3
	M	506	45	1700	3
2	F	610	50	2700	5
	F	590	50	2750	5
	F	590	47	2500	5
	F	562	49	2350	5
	F	580	48	2650	4
	F	578	47	2400	4
	F	576	46	2400	4
	F	562	46	2250	4
	F	558	45	2100	4
	F	540	42	1700	4
	F	550	46	2400	3
	F	524	42	1600	3
	F	516	41	1600	3
	F	508	43	1800	3
	F	555	46	1950	—
	M	608	57	2700	5
	M	599	52	2550	5
	M	582	51	2600	5
	M	614	57	2900	4
	M	550	50	1900	4
	M	519	44	1600	4
	M	496	39	1600	4
	M	480	43	1500	4
	M	556	52	2600	3
	M	510	42	1600	3
3	F	605	45	2750	5
	F	592	52	2800	5
	F	588	50	2750	5
	F	553	48	2050	5

Table 12. (Continued)

No. of fishing	Sex	F. L. (mm)	S-E (mm)	B.W. (g)	Age
3	F	604	51	2900	4
	F	560	45	2300	4
	F	554	45	2300	4
	F	537	45	2050	4
	F	533	45	1950	4
	F	531	47	1950	4
	F	528	44	1800	4
	F	514	49	1950	4
	F	513	43	1850	4
	F	487	46	1750	4
	F	562	46	2200	3
	F	486	38	1350	3
	M	590	56	2550	4
	M	572	48	2150	4
	M	562	46	1900	4
	M	557	50	2300	4
	M	542	47	2150	4
	M	542	46	1800	4
	M	522	45	1800	4
	M	520	43	1950	4
	M	520	43	1950	3
	M	518	43	1900	3
	M	516	42	1700	3
	M	515	44	1800	3
	M	512	43	1900	3
	M	510	43	1750	3
	M	507	44	1600	3
	M	500	45	1700	3
	M	499	40	1650	3
	M	554	45	2050	—
4	F	600		2800	5
	F	570		2700	5
	F	564		2600	5
	F	690		3100	4
	F	688		3000	4
	F	614		3100	4
	F	610		3200	4
	F	610		2900	4
	F	600		2700	4
	F	590		2650	4
	F	586		2800	4

No. of fishing	Sex	F. L. (mm)	S-E (mm)	B. W. (g)	Age
4	F	572		2700	4
	F	630		3300	—
	F	560		2300	—
	M	658		4400	5
	M	636		3400	5
	M	620		3700	5
	M	600		2750	5
	M	640		3500	4
	M	615		3200	4
	M	602		3300	4
	M	600		2600	4
	M	581		2700	4
	M	550		2100	4
	M	540		2100	4
	M	528		2300	4

Table 12. (Continued)

d) Data in August 1958 cruise 4

1. Pink salmon カラフトマス

No. of fishing	Sex	F.L. (mm)	B.W. (g)	G.W. (g)
1	F	550	2200	180
	F	520	1900	190
	F	518	1550	185
	F	512	1800	180
	F	506	1750	135
	F	501	1700	180
	F	485	1600	160
	F	485	1500	130
	F	477	1550	140
	F	466	1400	140
	F	460	1450	150
	F	455	1350	120
	F	422	950	60
	M	571	2500	200
	M	557	2600	240
	M	546	2200	90
	M	538	2200	150
	M	517	1900	110
	M	514	1950	170
	M	463	1250	90
2	F	540	2100	170
	F	533	2000	170
	F	516	2000	190
	F	512	1800	180
	F	508	1750	190
	F	507	1750	140
	F	489	1650	180
	F	489	1550	140
	F	470	1400	120
	F	429	1050	100
	M	569	2550	150
	M	560	2800	250
	M	550	2100	150
	M	532	2050	190
	M	528	1900	140
3	F	537	2200	200
	F	536	2250	200
	F	535	2400	170
3	F	534	2150	190
	F	530	2000	200
	F	528	2100	200
	F	527	2150	180
	F	526	2000	160
	F	518	2000	120
	F	514	2000	190
	F	513	1900	180
	F	513	1850	200
	F	507	2000	150
	F	505	1450	100
	F	500	1650	150
	F	496	1700	140
	F	494	1550	160
	F	487	1600	190
	M	562	2500	170
	M	552	2100	140
	M	514	1800	160
	M	489	1450	120
	—	538	2150	—
4	F	551	2200	200
	F	540	2100	190
	F	533	2000	160
	F	525	1900	200
	F	518	2050	120
	F	517	2050	160
	F	515	1700	150
	F	507	1900	130
	F	506	1700	110
	F	503	1750	150
	F	500	1600	150
	F	493	1750	120
	F	490	1650	110
	M	602	3200	160
	M	575	2800	250
	M	570	2800	210
	M	549	1950	160
	M	523	1850	160

Table 12. (Continued)

No. of fishing	Sex	F. L. (mm)	B. W. (g)	G. W. (g)
4	M	485	1750	25
	M	474	1250	100
5	F	569	2550	150
	F	535	2100	220
	F	533	1950	190
	F	531	2000	140
	F	530	1900	140
	F	529	1800	180
	F	527	2050	190
	F	520	1850	200
	F	519	1850	160
	F	515	1900	190
	F	513	1900	160
	F	513	1550	110
	F	506	1650	150
	F	504	1850	150
	F	504	1450	120
	M	561	2250	70
	M	561	2100	170
	M	520	1950	190
	M	497	1550	120
	M	457	1300	100

2. Chum salmon シロザケ

No. of fishing	Sex	F. L. (mm)	S-E (mm)	B. W. (g)	G. W. (g)	Age
1	F	615	47	3250	130	4
	F	545	44	2200	250	4
	F	486	36	1450	15	4
	F	540	42	2000	165	3
	F	530	41	2150	170	3
	F	527	41	2050	175	3
	F	526	41	2000	140	3
	F	526	40	2000	12	3
	F	523	37	2300	130	3
	F	511	39	1950	100	3
	F	502	38	2000	100	3
	M	587	40	2200	2	4
	M	562	43	2350	75	4
	M	390	27	800	1	4
	M	577	51	2650	150	3
	M	568	54	2800	170	3
	M	556	51	2400	150	3
	M	556	50	2400	160	3
	M	549	51	2300	155	3
	M	538	47	2300	140	3
	M	534	50	2000	90	3
	M	514	49	1600	80	3
	M	501	41	1950	140	3
	M	500	42	1600	84	3
2	F	629	53	3600	350	4
	F	560	45	2600	17	4
	F	559	49	2550	300	3
	F	553	45	2300	250	3
	F	552	45	2500	230	3
	F	541	45	2350	210	3
	F	511	41	1700	120	3
	F	510	41	1950	200	3
	M	658	66	4200	230	4
	M	617	65	2950	80	4
	M	533	53	2200	40	4
	M	368	30	650	35	4
	M	540	42	2300	5	3
	M	513	46	1900	170	3
	M	507	46	1700	100	3

Table 12. (Continued)

No. of fishing	Sex	F. L. (mm)	S-E (mm)	B. W. (g)	G. W. (g)	Age
3	F	527	40	2050	150	3
	F	515	38	1700	7	3
	F	500	34	1450	10	3
	F	462	35	1400	10	—
	M	573	58	2550	100	3
	M	534	48	2250	170	3
	M	518	48	1800	110	3
	M	513	45	1900	110	3
	M	505	39	1900	2	3
	M	542	50	2400	160	—
	M	538	46	2250	130	—
4	F	620	48	3400	60	4
	F	616	45	2600	60	4
	F	578	44	2900	210	4
	F	570	45	2650	200	4
	F	563	44	2700	220	4
	F	539	40	2300	230	4
	F	538	39	2100	100	4
	F	528	40	2150	40	4
	F	516	38	1650	60	4
	F	493	36	1800	160	4
	F	587	45	3200	190	3
	F	542	45	2250	210	3
	F	520	41	1900	130	3
	F	519	38	1900	130	3
	F	515	39	1700	100	3
	F	507	40	1850	10	3
	F	494	36	1700	10	3
	M	570	53	2400	70	4
	M	538	44	2100	130	3
	M	525	46	2100	120	3
	M	520	40	1750	1	3
	M	519	47	1800	120	3
	M	497	39	1700	2	3
	M	496	41	2200	90	3
	M	403	33	1000	60	2
5	F	622	52	3200	420	5
	F	608	50	2900	80	4
	F	607	51	3300	150	4
	F	600	49	3000	230	4

No. of fishing	Sex	F. L. (mm)	S-E (mm)	B. W. (g)	G. W. (g)	Age
5	F	573	49	2800	260	4
	F	558	40	2250	15	4
	F	522	42	1700	150	4
	F	575	35	2550	180	3
	F	570	52	2700	290	3
	F	534	41	2200	300	3
	F	532	45	2050	120	3
	F	526	48	1850	280	3
	F	518	41	1950	150	3
	F	516	39	2000	13	3
	F	648	48	3800	260	—
	F	583	50	2700	120	—
	F	560	43	2250	140	—
	M	612	49	3000	180	4
	M	601	51	3000	2	4
	M	537	49	2400	130	4
	M	507	45	2000	120	4
	M	571	50	2400	160	3
	M	536	49	2150	120	3
	M	518	41	1800	1	3
	M	500	38	1850	2	3
	M	452	39	1150	90	3
	M	539	51	2400	170	—
	M	521	47	1900	160	—
	—	520	45	1800	90	3
6	F	638	51	3200	310	5
	F	636	53	3450	260	5
	F	672	50	4300	190	4
	F	588	46	2700	370	4
	F	586	46	3150	130	4
	F	552	48	2100	240	4
	F	518	38	2100	120	4
	F	647	48	3450	130	3
	F	557	47	2550	130	3
	F	548	42	1550	180	3
	F	595	48	3050	350	—
	M	658	55	4000	60	4
	M	533	51	2350	160	4
	M	513	47	2000	170	4
	M	584	56	3000	180	3
	M	543	53	2500	140	3

Table 12. (Continued)

No. of fishing	Sex	F. L. (mm)	S-E (mm)	B. W. (g)	G. W. (g)	Age
6	M	512	42	1700	1	3
	M	500	45	1700	120	3
	M	552	56	2750	130	—
	M	540	47	2300	130	—

3. Sockeye salmon ベニサケ

No. of fishing	Sex	F. L. (mm)	S-E (mm)	B. W. (g)	G. W. (g)	Age
1	F	592	51	2900	220	7_4
	F	561	46	2600	120	6_3
	F	537	40	2000	130	6_4
	F	561	42	2450	160	5_3
	F	560	45	2400	140	5_3
	F	550	39	2350	110	5_3
	F	548	39	2100	120	5_3
	F	538	42	2200	125	5_3
	F	568	44	2450	280	—
	F	545	40	2300	97	—
	F	485	35	1500	65	—
	M	609	57	3200	60	6_3
	M	578	55	2950	60	6_4
	M	525	46	2000	45	6_4
	M	604	58	2900	55	—
	M	565	60	2750	90	—
2	F	587	47	2850	150	7_4
	F	517	41	1800	95	7_4
	F	568	47	2650	350	6_4
	F	547	42	2350	180	6_4
	F	536	40	2200	90	6_4
	F	535	40	2200	60	6_4
	F	554	50	2450	120	5_3
	F	535	43	1800	200	5_3
	F	527	42	1550	80	5_3
	F	493	37	1600	70	5_3
	F	642	69	3650	130	—
	F	521	42	1850	230	—
	F	472	35	1350	70	—
	M	608	71	3500	60	7_4
	M	554	55	2400	70	6_4
	M	553	59	2250	70	6_4
	M	591	60	2650	60	5_3
3	F	556	46	2250	140	7_4
	F	590	49	2700	110	6_3
	F	563	45	2400	150	6_3
	F	473	35	1250	40	6_3
	F	530	42	2050	150	5_2
	F	520	42	1850	130	5_2
	F	578	48	2350	230	5_3
	F	544	45	2200	70	5_3
	F	536	39	2300	150	5_3
	F	556	43	2150	110	—
	F	525	41	1950	90	—
	M	517	48	1800	70	7_4
	M	654	77	4250	100	6_3
	M	576	50	2900	50	6_3
	M	540	52	2000	80	6_4
	M	578	59	2600	90	5_3
	M	565	53	2500	90	—
	M	560	55	2550	110	—
	M	428	41	1050	60	—
4	F	620	52	3300	190	7_4
	F	567	44	2600	115	7_4
	F	544	40	2300	70	6_3
	F	535	43	1850	80	6_4
	F	531	46	2100	160	5_3
	F	525	40	1900	130	5_3
	F	582	49	2850	320	—
	F	570	51	3000	400	—
	F	543	42	2300	90	—
	F	543	42	1900	210	—
	M	614	60	2900	70	8_4
	M	660	71	3900	50	7_3
	M	629	65	3350	65	5_2
	M	550	55	2200	50	5_3
	M	496	45	1750	80	5_3
	M	608	64	3150	70	—
5	F	572	46	2600	110	6_3
	F	490	39	1550	65	6_3
	F	586	44	2700	160	5_2
	F	523	41	1900	110	5_2
	F	546	43	2150	130	5_3
	F	493	36	1450	75	5_3

Table 12. (Continued)

4. Silver salmon ギンサケ

No. of fishing	Sex	F. L. (mm)	S-E (mm)	B. W. (g)	G. W. (g)	Age
5	F	526	42	1650	90	—
	M	565	54	2200	70	7_4
	M	550	56	2000	50	6_4
	M	516	52	1650	70	5_3
	M	587	63	2350	60	—
6	F	550	45	2350	120	7_4
	F	530	39	1850	70	7_4
	F	497	39	1900	70	7
	F	610	54	2800	280	6
	F	594	52	2850	320	6
	F	512	45	1750	230	6_3
	F	510	41	2100	150	6_3
	F	528	41	2000	180	6_4
	F	558	46	2450	130	5
	F	518	50	2000	180	5
	F	590	47	2800	120	5
	F	542	48	2250	110	5_3
	F	480	39	1400	100	5_3
	F	600	55	3150	190	—
	F	512	41	1700	120	—
	M	570	56	2600	70	7_4
	M	556	54	2100	90	7_4
	M	638	63	3200	60	6_2
	M	618	58	2800	47	6_4
	M	602	61	2900	70	5_3
	M	518	45	1750	80	5_3
	M	584	60	2900	90	—
	M	513	48	2000	50	—

No. of fishing	Sex	F. L. (mm)	S-E (mm)	B. W. (g)	G. W. (g)
1	F	605	51	3800	170
	F	602	51	3100	190
	F	601	50	3300	250
	F	589	51	2900	160
	F	573	46	3000	190
	F	571	49	2900	150
	F	563	45	3000	150
	F	562	44	3000	220
	M	645	65	4400	260
	M	640	63	3500	170
	M	630	63	4100	190
	M	628	66	4150	200
	M	623	60	4000	180
	M	623	57	3900	180
	M	622	59	3950	200
	M	621	62	3550	120
	M	614	62	3700	160
	M	614	56	3700	180
	M	605	58	3600	180
	M	594	57	3300	200
	M	585	56	3000	140
	M	561	54	3150	210
	M	556	50	2700	165
	M	550	50	2650	185
2	F	624	54	3700	180
	F	622	51	3300	180
	F	615	56	3650	360
	F	613	48	3600	260
	F	612	52	3250	230
	F	598	54	3400	260
	F	595	54	3000	160
	F	582	51	2950	200
	F	577	52	3100	150
	F	571	49	2900	220
	F	555	48	2800	180
	F	551	47	2700	220
	F	536	48	2100	135
	M	671	74	4600	190
	M	611	67	3750	205

Table 12. (Continued)

No. of fishing	Sex	F.L. (mm)	S-E (mm)	B.W. (g)	G. W. (g)
2	M	606	67	3200	180
	M	605	60	3800	180
	M	591	55	3000	130
	M	573	57	2700	170
	M	565	54	3000	200
	M	544	51	2350	40
	M	543	59	2500	90
	M	542	55	2550	170
	M	509	51	2250	160
	M	504	47	2100	130
3	F	615	52	3600	280
	F	592	50	3150	130
	F	572	52	2800	160
	F	569	49	2950	170
	F	568	46	2400	150
	M	663	70	4800	170
	M	619	61	3500	170
	M	600	58	3550	170
	M	581	59	3200	150
	M	580	55	2700	200
	M	540	52	2300	80
	M	380	39	1000	40
4	F	645	58	4250	220
	F	642	65	4000	160
	F	637	55	3650	240
	F	632	64	3350	180
	F	632	56	3650	200
	F	625	54	3700	140
	F	623	61	3600	190
	F	622	52	3150	160
	F	621	53	3350	190
	F	618	54	2950	160
	F	610	54	3700	200
	F	607	52	3100	110
	F	598	50	3150	100
	F	596	52	3150	200
	F	588	53	3100	180
	F	582	45	3000	180
	F	576	53	2800	170
	F	572	56	2300	130

No. of fishing	Sex	F.L. (mm)	S-E (mm)	B.W. (g)	G. W. (g)
4	F	562	47	2700	180
	F	555	52	2300	200
	M	668	68	4100	170
	M	631	65	3200	110
	M	620	53	3900	200
	M	619	67	3400	70
	M	615	55	3150	90
	M	610	60	3500	170
	M	610	59	3300	130
	M	605	60	3000	150
	M	605	54	3200	100
	M	604	60	2650	100
	M	599	50	3450	130
	M	593	53	3400	95
	M	585	56	3250	230
	M	563	56	2700	150
	M	557	54	2500	130
	M	555	51	2350	150
	M	525	47	2100	230
	M	518	51	2000	100
	M	485	44	1500	80
5	F	636	52	3700	200
	F	630	56	3650	300
	F	625	57	3300	140
	F	625	49	3700	150
	F	619	57	3850	230
	F	618	54	3600	230
	F	607	50	2900	230
	F	590	51	3000	330
	F	588	49	3150	140
	F	583	53	3200	230
	F	578	47	3100	170
	F	544	45	2500	110
	F	511	39	1900	140
	M	632	63	3800	160
	M	617	62	3700	220
	M	613	52	3300	230
	M	607	48	3050	140
	M	602	64	3650	220
	M	600	67	3400	250
	M	600	61	3800	220

Table 12. (Continued)

No. of fishing	Sex	F.L. (mm)	S-E (mm)	B.W. (g)	G. W. (g)
5	M	595	60	3200	22
	M	595	55	3100	150
	M	593	59	2650	120
	M	590	58	2850	160
	M	584	54	2700	190
	M	565	56	2600	140
	M	565	55	2800	160
	M	558	60	2800	160
	M	550	50	2300	50
	M	547	55	2500	150
	M	543	50	2200	90
	M	534	48	2500	130
6	F	628	60	3500	150
	F	625	49	3300	190
	F	622	53	3700	210
	F	622	52	3350	140
	F	621	50	3700	200
	F	618	60	3450	140
	F	617	58	3400	280
	F	612	51	3300	220
	F	612	51	3300	190
	F	611	59	3350	200
	F	611	52	3300	190
	F	611	51	3400	220
	F	610	50	3150	240
	F	610	49	3400	190
	F	607	53	3350	220
	F	606	50	3300	160
	F	605	52	3500	150
	F	604	49	3250	190
	F	602	53	3200	240
	F	600	55	3350	320
	F	600	48	3050	170
	F	598	54	3500	240
	F	598	53	3400	140
	F	596	48	3400	160
	F	594	50	3350	200
	F	594	50	2900	180
	F	593	52	3300	270
	F	592	50	3300	160
	F	592	50	2800	150

No. of fishing	Sex	F.L. (mm)	S-E (mm)	B.W. (g)	G. W. (g)
6	F	588	50	3300	160
	F	586	54	3100	280
	F	586	49	2700	170
	F	584	51	3150	130
	F	584	49	2450	200
	F	580	50	3350	220
	F	580	49	2800	240
	F	578	48	2700	180
	F	577	50	2700	350
	F	572	47	2700	100
	F	565	42	2650	130
	F	562	47	2400	130
	F	553	45	2450	140
	F	550	50	2300	160
	F	548	46	2050	120
	F	536	44	2300	130
	M	646	62	3700	210
	M	634	63	4200	180
	M	627	62	3900	100
	M	624	61	3400	170
	M	621	56	3500	190
	M	620	57	3600	250
	M	617	62	3650	180
	M	615	52	3600	80
	M	614	55	3500	190
	M	613	63	3700	200
	M	612	62	3800	220
	M	610	62	3000	190
	M	605	61	3400	180
	M	605	58	3300	130
	M	605	52	3350	110
	M	603	59	3400	90
	M	602	57	3500	250
	M	600	52	3200	180
	M	600	51	3000	150
	M	597	54	3100	140
	M	596	52	3150	100
	M	592	59	3300	200
	M	592	56	2600	120
	M	590	53	2850	150
	M	589	53	3350	140

Table 12. (Continued)

No. of fishing	Sex	F.L. (mm)	S-E (mm)	B.W. (g)	G. W. (g)
6	M	584	53	2500	140
	M	580	56	2700	180
	M	578	55	2950	220
	M	575	55	2250	120
	M	575	51	2800	170
	M	568	52	2800	160
	M	556	55	2500	110
	M	553	53	2400	150
	M	553	52	2450	120
	M	552	51	2700	140
	M	540	51	2200	80
	M	537	52	2400	150
	M	537	48	2000	80
	M	536	47	1950	70
	M	515	45	2000	100
	M	508	44	1650	80
	M	484	43	1600	80